

AA903406, AA903406 ok62c11.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 40 0.67  
 AA461270, AA461270 zx63b07.r1 Soares total fetus Nb2HF8 9w Ho... 40 0.67  
 AA927863, AA927863 om18a08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 40 0.67  
 AA587486, AA587486 nn84e09.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.67  
 W47466, W47466 zc34h02.r1 Soares senescent fibroblasts NbHSF ... 40 0.67  
 AA022495, AA022495 ze70e04.s1 Soares fetal heart NbHH19W Homo... 40 0.67  
 AA460961, AA460961 zx63b07.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.67  
 AA393904, AA393904 zt85e06.r1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA872272, AA872272 oh72a11.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.67  
 W47341, W47341 zc34h02.s1 Soares senescent fibroblasts NbHSF ... 40 0.67  
 N72024, N72024 yz96g01.s1 Homo sapiens cDNA clone 290928 3'. 40 0.67  
 N35076, N35076 yy19b08.s1 Homo sapiens cDNA clone 271671 3'. 40 0.67  
 AA813115, AA813115 aj44d06.s1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA826741, AA826741 85f12.s1 NCI\_CGAP\_Pr24 Homo sapiens cDNA... 40 0.67  
 AA160827, AA160827 zo62e01.s1 Stratagene pancreas (#937208) H... 40 0.67  
 AI040354, AI040354 oy33d12.x1 Soares\_parathyroid\_tumor\_NbHPA ... 40 0.67  
 AA573297, AA573297 nk98d09.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.67  
 AA416559, AA416559 zu18c03.r1 Soares NhHMPu S1 Homo sapiens c... 40 0.67  
 AA401079, AA401079 zv66d01.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.67  
 AI005204, AI005204 ou60c12.x1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.67  
 N21678, N21678 yx63g01.s1 Soares melanocyte 2NbHM Homo sapien... 40 0.67  
 AA824270, AA824270 aj29f01.s1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA804907, AA804907 oa89a01.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.67  
 AA759038, AA759038 ah75h11.s1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA417295, AA417295 zu18c03.s1 Soares NhHMPu S1 Homo sapiens c... 40 0.67  
 AA628544, AA628544 af27h12.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.67  
 AA618498, AA618498 np30a11.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 40 0.67  
 AA503727, AA503727 ne49g02.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.67  
 AA514777, AA514777 ni24b01.s1 NCI\_CGAP\_Co4 Homo sapiens cDNA ... 40 0.67  
 AA040802, AA040802 zf07g05.s1 Soares fetal heart NbHH19W Homo... 40 0.67  
 AA770473, AA770473 ah89h06.s1 Soares NFL T GBC S1 Homo sapien... 40 0.67  
 AA759377, AA759377 ah54a10.s1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA629243, AA629243 zu77e03.s1 Soares testis NHT Homo sapiens ... 40 0.67  
 AA262162, AA262162 zs25b12.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.67  
 AA161105, AA161105 zo58c05.s1 Stratagene pancreas (#937208) H... 38 2.6  
 AA852281, AA852281 NHTBCae11g05r1 Normal Human Trabecular Bon... 38 2.6  
 AA948291, AA948291 oq34d02.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 38 2.6  
 AA416734, AA416734 zu08c01.s1 Soares testis NHT Homo sapiens ... 38 2.6  
 N98472, N98472 yy65a04.r1 Homo sapiens cDNA clone 278382 5'. 38 2.6  
 AA416815, AA416815 zu08c01.r1 Soares testis NHT Homo sapiens ... 38 2.6  
 AA431486, AA431486 zw72g01.s1 Soares testis NHT Homo sapiens ... 38 2.6  
 H30248, H30248 yp42a01.s1 Homo sapiens cDNA clone 190056 3'. 38 2.6  
 R82551, R82551 yj19d06.r1 Homo sapiens cDNA clone 149195 5'. 38 2.6

AA616807, AA616807 vn68c05.r1 Barstead mouse irradiated colon... 180 1e-43  
AA014223, AA014223 mh20a03.r1 Soares mouse placenta 4NbMP13.5... 40 0.24  
AA014768, AA014768 mi66h04.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
AA185487, AA185487 mt62c07.r1 Soares 2NbMT Mus musculus cDNA ... 40 0.24  
AA103139, AA103139 mol17f05.r1 Life Tech mouse embryo 13 5dpc ... 40 0.24  
AI048515, AI048515 uh61e08.r1 Soares mouse embryonic stem cel... 40 0.24  
AA711859, AA711859 vu59c10.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA009071, AA009071 mg87b11.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
AA276740, AA276740 vc42a12.r1 Soares mouse 3NbMS Mus musculus... 40 0.24  
AA497479, AA497479 vh29b12.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA038869, AA038869 mi95b10.r1 Soares mouse p3NMF19.5 Mus musc... 40 0.24  
AA790448, AA790448 vw04f09.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA881111, AA881111 vz06e09.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA007762, AA007762 mg76b03.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
W83172, W83172 mf09a06.r1 Soares mouse p3NMF19.5 Mus musculus... 40 0.24  
AA106439, AA106439 ml59a08.r1 Stratagene mouse testis (#93730... 40 0.24  
AA000268, AA000268 mg32e09.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
AI047077, AI047077 uh61g06.r1 Soares mouse embryonic stem cel... 40 0.24  
AA543280, AA543280 vj80h05.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA106301, AA106301 ml81a09.r1 Stratagene mouse kidney (#93731... 40 0.24  
AA467482, AA467482 ve01a10.r1 Soares mouse NbMH Mus musculus ... 40 0.24  
AA797372, AA797372 vw27b08.r1 Soares mouse mammary gland NbMM... 40 0.24  
W77724, W77724 me84h06.r1 Soares mouse embryo NbME13.5 14.5 M... 40 0.24  
AA049011, AA049011 mj48c09.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
AA763419, AA763419 vw54a12.r1 Soares mouse mammary gland NMLM... 40 0.24  
AA138067, AA138067 mq37c11.r1 Barstead MPLRB1 Mus musculus cD... 40 0.24  
AA475425, AA475425 vh20g09.r1 Soares mouse mammary gland NbMM... 40 0.24  
AA469884, AA469884 vf71g10.r1 Barstead mouse pooled organs MP... 40 0.24  
AA016868, AA016868 mh36e12.r1 Soares mouse placenta 4NbMP13.5... 40 0.24  
AA230758, AA230758 my32g10.r1 Barstead mouse pooled organs MP... 40 0.24  
AA833479, AA833479 uc91c03.r1 Soares mouse uterus NMPu Mus mu... 40 0.24  
W61547, W61547 md57a02.r1 Soares mouse embryo NbME13.5 14.5 M... 40 0.24  
AA033481, AA033481 mi42b07.r1 Soares mouse embryo NbME13.5 14... 40 0.24  
AA068686, AA068686 mm59a03.r1 Stratagene mouse embryonic carc... 38 0.94  
AA796056, AA796056 vo65d01.r1 Soares mouse mammary gland NbMM... 36 3.7  
C87249, C87249 Mus musculus fertilized egg cDNA 3'-end seque... 36 3.7  
AA921560, AA921560 vy52c06.r1 Stratagene mouse lung 937302 Mu... 36 3.7  
W87202, W87202 mf55g08.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.7  
AA542324, AA542324 vk53e07.r1 Stratagene mouse Tcell 937311 M... 36 3.7  
AA967316, AA967316 vj47a03.r1 Stratagene mouse skin (#937313)... 36 3.7  
W62989, W62989 md88h12.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.7  
AA530735, AA530735 vj32g11.r1 Stratagene mouse diaphragm (#93... 36 3.7  
AA218431, AA218431 my07e05.r1 Barstead mouse lung MPLRB2 Mus ... 36 3.7  
AA591243, AA591243 vm18c04.r1 Knowles Solter mouse blastocyst... 36 3.7

AI047609, AI047609 uh63g07.r1 Soares mouse embryonic stem cel... 36 3.7  
 AA692425, AA692425 vt59b05.r1 Barstead mouse irradiated colon... 36 3.7  
 AA966976, AA966976 ua38f11.r1 Soares mouse mammary gland NbMM... 36 3.7  
 AA856298, AA856298 vw99b01.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.7  
 W20935, W20935 mb96c07.r1 Soares mouse p3NMF19.5 Mus musculus... 36 3.7  
 AA230661, AA230661 mw15f08.r1 Soares mouse 3NME12 5 Mus muscu... 36 3.7  
 AA111190, AA111190 mp66b11.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.7  
 AA840087, AA840087 uc99h12.r1 Soares mouse uterus NMPu Mus mu... 36 3.7  
 AA089210, AA089210 mo05d10.r1 Stratagene mouse lung 937302 Mu... 36 3.7  
 AI035925, AI035925 ub49e05.r1 Soares mouse mammary gland NbMM... 36 3.7  
 AA824205, AA824205 vy20g08.r1 Stratagene mouse macrophage (#9... 36 3.7  
 AA793845, AA793845 vr35e12.r1 Barstead mouse myotubes MPLRB5 ... 36 3.7  
 AA239210, AA239210 mx89e02.r1 Soares mouse NML Mus musculus c... 36 3.7  
 AA711873, AA711873 vu28e06.r1 Barstead mouse myotubes MPLRB5 ... 36 3.7  
 AA645119, AA645119 vs72d03.r1 Stratagene mouse skin (#937313)... 36 3.7

AA957268, AA957268 UI-R-E1-fq-e-06-0-UI.s1 UI-R-E1 Rattus nor... 42 0.053  
 C83463, C83463 Oryctolagus cuniculus corneal endothelial cDN... 38 0.84  
 AA859448, AA859448 UI-R-A0-bf-b-01-0-UI.s1 UI-R-A0 Rattus nor... 38 0.84  
 AA874930, AA874930 UI-R-E0-ci-b-05-0-UI.s1 UI-R-E0 Rattus nor... 38 0.84  
 C82607, C82607 Oryctolagus cuniculus corneal endothelial cDN... 38 0.84  
 AI009631, AI009631 EST204082 Normalized rat lung, Bento Soare... 38 0.84  
 AA801145, AA801145 EST190642 Normalized rat ovary, Bento Soar... 38 0.84  
 AI012760, AI012760 EST207211 Normalized rat placenta, Bento S... 38 0.84  
 AA956139, AA956139 UI-R-E1-fi-h-08-0-UI.s1 UI-R-E1 Rattus nor... 38 0.84  
 AA801144, AA801144 EST190641 Normalized rat ovary, Bento Soar... 38 0.84  
 AA660819, AA660819 00713 MtRHE Medicago truncatula cDNA 5' ... 38 0.84  
 AA859865, AA859865 UI-R-E0-cc-b-04-0-UI.s1 UI-R-E0 Rattus nor... 38 0.84  
 AI009035, AI009035 EST203486 Normalized rat embryo, Bento Soa... 38 0.84  
 AA859542, AA859542 UI-R-E0-br-d-03-0-UI.s1 UI-R-E0 Rattus nor... 38 0.84  
 T00613, T00613 wEST01334 Caenorhabditis elegans cDNA clone CE... 38 0.84  
 H32878, H32878 EST108396 Rat PC-12 cells, untreated Rattus sp... 36 3.3  
 AA125602, AA125602 JM00M011.QM3 Miracidia Sjc 3/96 Schistosom... 36 3.3  
 D45997, RICS10346A Rice cDNA, partial sequence (S10346\_1A). 36 3.3  
 AA943364, AA943364 EST198863 Normalized rat brain, Bento Soar... 36 3.3  
 C68472, C68472 C.elegans cDNA clone yk305a12 : 5' end, singl... 36 3.3  
 AA785775, AA785775 h4b05a1.f1 Aspergillus nidulans 24hr asexu... 36 3.3  
 D46069, RICS10475A Rice cDNA, partial sequence (S10475\_1A). 36 3.3  
 AA660859, AA660859 00754 MtRHE Medicago truncatula cDNA 5' si... 36 3.3  
 Z33974, ATTS3035 A. thaliana transcribed sequence; clone PAP... 36 3.3  
 Z32603, ATTS2731 A. thaliana transcribed sequence; clone PAP... 36 3.3  
 AA955567, AA955567 UI-R-E1-fa-a-08-0-UI.s1 UI-R-E1 Rattus nor... 36 3.3  
 AA842765, AA842765 M-EST080 Sugarcane mature stalk Saccharum ... 36 3.3  
 Z32602, ATTS2730 A. thaliana transcribed sequence; clone PAP... 36 3.3

SEQ ID NO:548

U66197, HSU66197 Human fibroblast growth factor homologous fa... 42 0.34  
AF020738, AF020738 Mus musculus fibroblast growth factor-rela... 42 0.34  
U66201, MMU66201 Mus musculus fibroblast growth factor homolo... 42 0.34  
Z46966, MMIMOGN44 M.musculus mRNA for imogen 44. 40 1.3  
AC004301, AC004301 Drosophila melanogaster DNA sequence (P1 D... 40 1.3  
U86662, LEU86662 Lycopersicon esculentum VPS41 (tVPS41) mRNA,... 40 1.3  
U85773, HSU85773 Human phosphomannomutase (PMM2) mRNA, comple... 40 1.3

## HUMAN ESTs

W22160, W22160 63A6 Human retina cDNA Tsp509I-cleaved sublibr... 791 0.0  
AA860926, AA860926 ak22d06.s1 Soares testis NHT Homo sapiens ... 650 0.0  
AA348243, AA348243 EST54707 Hippocampus I Homo sapiens cDNA 5... 513 e-143  
AA551799, AA551799 nk04a11.s1 NCI\_CGAP\_Co2 Homo sapiens cDNA ... 363 3e-98  
AA327309, AA327309 EST30621 Colon I Homo sapiens cDNA 5' end 353 3e-95  
AA344913, AA344913 EST50856 Gall bladder II Homo sapiens cDNA... 337 2e-90  
AA121198, AA121198 zl88g08.r1 Stratagene colon (#937204) Homo... 317 2e-84  
AA121174, AA121174 zl88g08.s1 Stratagene colon (#937204) Homo... 317 2e-84  
AA001561, AA001561 ze46e07.s1 Soares retina N2b4HR Homo sapie... 42 0.16  
AA041240, AA041240 zf07g05.r1 Soares fetal heart NbHH19W Homo... 40 0.64  
AA039536, AA039536 zk39h10.s1 Soares pregnant uterus NbHPU Ho... 40 0.64  
AA040802, AA040802 zf07g05.s1 Soares fetal heart NbHH19W Homo... 40 0.64  
AA573297, AA573297 nk98d09.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.64  
N35888, N35888 yy28b05.s1 Homo sapiens cDNA clone 272529 3'. 40 0.64  
AA888147, AA888147 04h11.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 40 0.64  
AA172158, AA172158 zp29a01.s1 Stratagene neuroepithelium (#93... 40 0.64  
AA877455, AA877455 ob33g01.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.64  
R02514, R02514 ye70b08.r1 Homo sapiens cDNA clone 123063 5'. 40 0.64  
AA514777, AA514777 ni24b01.s1 NCI\_CGAP\_Co4 Homo sapiens cDNA ... 40 0.64  
AA416734, AA416734 zu08c01.s1 Soares testis NHT Homo sapiens ... 38 2.5  
N98472, N98472 yy65a04.r1 Homo sapiens cDNA clone 278382 5'. 38 2.5  
AA416815, AA416815 zu08c01.r1 Soares testis NHT Homo sapiens ... 38 2.5  
AA431486, AA431486 zw72g01.s1 Soares testis NHT Homo sapiens ... 38 2.5  
AA948291, AA948291 oq34d02.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 38 2.5  
AA852281, AA852281 NHTBCae11g05r1 Normal Human Trabecular Bon... 38 2.5



AA616807, AA616807 vn68c05.r1 Barstead mouse irradiated colon... 180 1e-43  
 AA469884, AA469884 vf71g10.r1 Barstead mouse pooled organs MP... 40 0.23  
 AA230758, AA230758 my32g10.r1 Barstead mouse pooled organs MP... 40 0.23  
 AA038869, AA038869 mi95b10.r1 Soares mouse p3NMF19.5 Mus musc... 40 0.23  
 AA763419, AA763419 vw54a12.r1 Soares mouse mammary gland NMLM... 40 0.23  
 AA185487, AA185487 mt62c07.r1 Soares 2NbMT Mus musculus cDNA ... 40 0.23  
 AA106439, AA106439 ml59a08.r1 Stratagene mouse testis (#93730... 40 0.23  
 AA276740, AA276740 vc42a12.r1 Soares mouse 3NbMS Mus musculus... 40 0.23  
 AA068686, AA068686 mm59a03.r1 Stratagene mouse embryonic carc... 38 0.91  
 AA711873, AA711873 vu28e06.r1 Barstead mouse myotubes MPLRB5 ... 36 3.6  
 AA856298, AA856298 vw99b01.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.6  
 W20935, W20935 mb96c07.r1 Soares mouse p3NMF19.5 Mus musculus... 36 3.6  
 AA966976, AA966976 ua38f11.r1 Soares mouse mammary gland NbMM... 36 3.6  
 AA921560, AA921560 vy52c06.r1 Stratagene mouse lung 937302 Mu... 36 3.6  
 AA692425, AA692425 vt59b05.r1 Barstead mouse irradiated colon... 36 3.6  
 W87202, W87202 mf55g08.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.6  
 AA840087, AA840087 uc99h12.r1 Soares mouse uterus NMPu Mus mu... 36 3.6  
 AA111190, AA111190 mp66b11.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.6  
 AA239210, AA239210 mx89e02.r1 Soares mouse NML Mus musculus c... 36 3.6  
 AA793845, AA793845 vr35e12.r1 Barstead mouse myotubes MPLRB5 ... 36 3.6  
 AA645119, AA645119 vs72d03.r1 Stratagene mouse skin (#937313)... 36 3.6  
 AA230661, AA230661 mw15f08.r1 Soares mouse 3NME12 5 Mus muscu... 36 3.6  
 AA824205, AA824205 vy20g08.r1 Stratagene mouse macrophage (#9... 36 3.6  
 C87249, C87249 Mus musculus fertilized egg cDNA 3'-end seque... 36 3.6  
 AA967316, AA967316 vj47a03.r1 Stratagene mouse skin (#937313)... 36 3.6  
 AA591243, AA591243 vm18c04.r1 Knowles Solter mouse blastocyst... 36 3.6  
 AI035925, AI035925 ub49e05.r1 Soares mouse mammary gland NbMM... 36 3.6  
 AA530735, AA530735 vj32g11.r1 Stratagene mouse diaphragm (#93... 36 3.6  
 AA218431, AA218431 my07e05.r1 Barstead mouse lung MPLRB2 Mus ... 36 3.6  
 W62989, W62989 md88h12.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.6  
 AA089210, AA089210 mo05d10.r1 Stratagene mouse lung 937302 Mu... 36 3.6  
 AA796056, AA796056 vo65d01.r1 Soares mouse mammary gland NbMM... 36 3.6  
 AA542324, AA542324 vk53e07.r1 Stratagene mouse Tcell 937311 M... 36 3.6  
  
 AA957268, AA957268 UI-R-E1-fq-e-06-0-UI.s1 UI-R-E1 Rattus nor... 42 0.052  
 T00613, T00613 wEST01334 Caenorhabditis elegans cDNA clone CE... 38 0.81  
 AA660819, AA660819 00713 MtRHE Medicago truncatula cDNA 5' ... 38 0.81  
 AA956139, AA956139 UI-R-E1-fi-h-08-0-UI.s1 UI-R-E1 Rattus nor... 38 0.81  
 D46069, RICS10475A Rice cDNA, partial sequence (S10475\_1A). 36 3.2  
 AA842765, AA842765 M-EST080 Sugarcane mature stalk Saccharum ... 36 3.2  
 AA955567, AA955567 UI-R-E1-fa-a-08-0-UI.s1 UI-R-E1 Rattus nor... 36 3.2  
 Z33974, ATTS3035 A. thaliana transcribed sequence; clone PAP... 36 3.2  
 H32878, H32878 EST108396 Rat PC-12 cells, untreated Rattus sp... 36 3.2  
 AA660859, AA660859 00754 MtRHE Medicago truncatula cDNA 5' si... 36 3.2

D45997, RICS10346A Rice cDNA, partial sequence (S10346\_1A). 36 3.2  
 Z32603, ATTS2731 *A. thaliana* transcribed sequence; clone PAP... 36 3.2  
 AA785775, AA785775 h4b05a1.fl *Aspergillus nidulans* 24hr asexu... 36 3.2  
 C68472, C68472 *C.elegans* cDNA clone yk305a12 : 5' end, singl... 36 3.2  
 AA125602, AA125602 JM00M011.QM3 Miracidia Sjc 3/96 Schistosom... 36 3.2  
 AA943364, AA943364 EST198863 Normalized rat brain, Bento Soar... 36 3.2  
 Z32602, ATTS2730 *A. thaliana* transcribed sequence; clone PAP... 36 3.2

SEQ ID NO:549

U79271, HSU79271 Human clones 23920 and 23921 mRNA sequence 650 0.0  
 AC000395, AC000395 Genomic sequence from Human 9q34, complete... 42 0.28  
 AC004636, AC004636 *Homo sapiens* chromosome 5, P1 clone 1268h6... 42 0.28  
 M94579, HUMCEL Human carboxyl ester lipase (CEL) gene, comple... 42 0.28  
 AC002097, AC002097 *Homo sapiens* chromosome 9q34, clone 246H5... 42 0.28  
 AB006709, AB006709 *Vibrio alginolyticus* rpoN gene for RNA po... 42 0.28  
 Z47074, CEK07C10 *Caenorhabditis elegans* cosmid K07C10, compl... 40 1.1  
 AC004755, AC004755 *Homo sapiens* chromosome 19, fosmid 37502, ... 40 1.1  
 Z28051, SCYKL051W *S.cerevisiae* chromosome XI reading frame O... 40 1.1  
 AF022655, AF022655 *Homo sapiens* cep250 centrosome associated ... 40 1.1  
 AB006708, AB006708 *Arabidopsis thaliana* genomic DNA, chromos... 40 1.1  
 AF049105, AF049105 *Homo sapiens* centrosomal Nek2-associated p... 40 1.1  
 Z28050, SCYKL050C *S.cerevisiae* chromosome XI reading frame O... 40 1.1  
 X75781, SCXI286K *S.cerevisiae* chromosome XI (28.6 kb) DNA fo... 40 1.1  
 Y16899, DMY16899 *Drosophila melanogaster* mRNA for optomotor-... 38 4.3  
 M87854, RATBARK1 *Rattus norvegicus* beta-adrenergic receptor k... 38 4.3  
 M74822, RATMHTLL Rat MHC class I TL-like protein gene, comple... 38 4.3  
 M80776, HUMBARK1A Human beta-adrenergic receptor kinase 1 mRN... 38 4.3  
 D84549, YSACA *Candida tropicalis* DNA for carnitine acetyltra... 38 4.3  
 L23127, RATRMCI *Rattus norvegicus* germline MHC class I gene, ... 38 4.3  
 AC004257, AC004257 *Homo sapiens* chromosome 19, cosmid R33209... 38 4.3  
 U70850, CELF28F9 *Caenorhabditis elegans* cosmid F28F9 38 4.3  
 U88309, CELT23B3 *Caenorhabditis elegans* cosmid T23B3 38 4.3  
 X53421, DVCHOS18 *D. virilis* s18, s15, s19, s16 chorion prote... 38 4.3  
 D89245, D89245 *Schizosaccharomyces pombe* mRNA, partial cds, ... 38 4.3  
 AF009623, AF009623 *Parascaris univalens* PUMA1 (puma1) mRNA, c... 38 4.3  
 S48813, S48813 beta-adrenergic receptor kinase [rats, brain, ... 38 4.3  
 Z67883, CEK02A4 *Caenorhabditis elegans* cosmid K02A4, complet... 38 4.3  
 U90567, GGU90567 *Gallus gallus* glutamine rich protein mRNA, p... 38 4.3  
 M98498, BOVEZRINA *Bos taurus* ezrin mRNA, complete cds. 38 4.3  
 M34073, MUSMHT10C *Mus musculus* (clone T10-c) MHC class I cell... 38 4.3

S81843, S81843 beta-adrenergic receptor kinase 1 [Syrian hams... 38 4.3  
 X61157, HSBARK H.sapiens mRNA for beta-adrenergic receptor k... 38 4.3  
 U08438, HSNBARKS4 Human beta-adrenergic receptor kinase (ADRB... 38 4.3  
 U39674, CELC06E2 Caenorhabditis elegans cosmid C06E2. 38 4.3

## HUMAN ESTs

W29097, W29097 56d11 Human retina cDNA randomly primed sublib... 1045 0.0  
 AA886109, AA886109 ny44f05.s1 NCI\_CGAP\_Pr12 Homo sapiens cDNA... 656 0.0  
 AA829894, AA829894 oe51e12.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 650 0.0  
 AA879456, AA879456 oj91g03.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 650 0.0  
 AA029201, AA029201 zk12f08.s1 Soares pregnant uterus NbHPU Ho... 650 0.0  
 AA102109, AA102109 zk87g11.s1 Soares pregnant uterus NbHPU Ho... 650 0.0  
 AA843811, AA843811 ak09c08.s1 Soares parathyroid tumor NbHPA ... 650 0.0  
 W72147, W72147 zd70f08.s1 Soares fetal heart NbHH19W Homo sap... 650 0.0  
 N51485, N51485 yz04e06.s1 Homo sapiens cDNA clone 282082 3'. 650 0.0  
 AI033069, AI033069 ow93f02.s1 Soares\_fetal\_liver\_spleen\_1NFLS... 642 0.0  
 AA161465, AA161465 zo73a06.s1 Stratagene pancreas (#937208) H... 638 0.0  
 N51277, N51277 yz14d07.s1 Homo sapiens cDNA clone 283021 3'. 636 e-180  
 N64528, N64528 yz91e06.s1 Homo sapiens cDNA clone 290434 3'. 636 e-180  
 H99906, H99906 yx32h10.s1 Homo sapiens cDNA clone 263491 3'. 636 e-180  
 AA812519, AA812519 ai79b03.s1 Soares testis NHT Homo sapiens ... 636 e-180  
 R71679, R71679 yj85e08.s1 Homo sapiens cDNA clone 155558 3'. 628 e-178  
 AA744290, AA744290 ny51d02.s1 NCI\_CGAP\_Pr18 Homo sapiens cDNA... 626 e-177  
 AI038590, AI038590 ox34e03.s1 Soares\_total\_fetus\_Nb2HF8\_9w Ho... 624 e-177  
 AA099913, AA099913 zk87g11.r1 Soares pregnant uterus NbHPU Ho... 624 e-177  
 AA083859, AA083859 zn16d06.s1 Stratagene neuroepithelium NT2R... 622 e-176  
 AA883684, AA883684 al58a05.s1 Soares NFL T GBC S1 Homo sapien... 613 e-173  
 R39448, R39448 yc95d03.s1 Homo sapiens cDNA clone 23921 3'. 593 e-167  
 R36854, R36854 yf52c07.s1 Homo sapiens cDNA clone 25899 3'. 591 e-167  
 H98684, H98684 yx17g01.s1 Homo sapiens cDNA clone 262032 3'. 585 e-165  
 R07471, R07471 ye97a06.s1 Homo sapiens cDNA clone 125650 3'. 581 e-164  
 AA910762, AA910762 ol25h06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 559 e-157  
 AA083954, AA083954 zn17d06.s1 Stratagene neuroepithelium NT2R... 555 e-156  
 AA346369, AA346369 EST52776 Fetal heart II Homo sapiens cDNA ... 545 e-153  
 R54092, R54092 yg98d07.s1 Homo sapiens cDNA clone 41818 3'. 539 e-151  
 H09074, H09074 yl97a06.s1 Homo sapiens cDNA clone 46164 3'. 535 e-150  
 N21975, N21975 yw30c10.s1 Homo sapiens cDNA clone 253746 3'. 533 e-149  
 D59844, HUM070E11A Human fetal brain cDNA 3'-end GEN-070E11. 466 e-129  
 H11525, H11525 ym15h07.s1 Homo sapiens cDNA clone 48232 3'. 442 e-122  
 AA971254, AA971254 op73c08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 442 e-122  
 W77907, W77907 zd70f08.r1 Soares fetal heart NbHH19W Homo sap... 428 e-118  
 AA878973, AA878973 oj26d11.s1 NCI\_CGAP\_Kid3 Homo sapiens cDNA... 389 e-106  
 AA715235, AA715235 nv10g01.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 357 2e-96

AA328928, AA328928 EST32475 Embryo, 12 week I Homo sapiens cD... 355 7e-96  
 AA860455, AA860455 aj80f02.s1 Soares parathyroid tumor NbHPA ... 283 2e-74  
 AA026096, AA026096 ze97a04.r1 Soares fetal heart NbHH19W Homo... 268 1e-69  
 AA026516, AA026516 ze97a04.s1 Soares fetal heart NbHH19W Homo... 172 6e-41  
 T26899, T26899 ESTDIR509 Homo sapiens cDNA clone CDDIR509 3'. 170 2e-40  
 N71178, N71178 yw30c10.r1 Homo sapiens cDNA clone 253746 5'. 165 1e-38  
 AA372290, AA372290 EST84170 Raji cells, cyclohexamide treated... 98 3e-18  
 AI038890, AI038890 ox84g12.x1 Soares\_senescent\_fibroblasts\_Nb... 40 0.53  
 D81647, HUM180D08B Human fetal brain cDNA 5'-end GEN-180D08. 38 2.1  
 AA452630, AA452630 zx33f08.r1 Soares total fetus Nb2HF8 9w Ho... 38 2.1  
 AA682624, AA682624 zi19g01.s1 Soares fetal liver spleen 1NFLS... 38 2.1  
 AA742364, AA742364 ny89c12.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.1  
 AA907234, AA907234 ol03h08.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 38 2.1  
 T09391, T09391 EST07284 Homo sapiens cDNA clone HIBBT71 5' en... 38 2.1  
 AA161236, AA161236 zo59h07.s1 Stratagene pancreas (#937208) H... 38 2.1  
 AA252941, AA252941 zr50g09.r1 Soares NhHMPu S1 Homo sapiens c... 38 2.1  
 AA252245, AA252245 zr64g07.s1 Soares NhHMPu S1 Homo sapiens c... 38 2.1  
 AA780678, AA780678 ac70h01.s1 Stratagene fetal retina 937202 ... 38 2.1  
 W05501, W05501 za84a12.r1 Soares fetal lung NbHL19W Homo sapi... 38 2.1  
 AI039908, AI039908 ox25f07.x1 Soares\_total\_fetus\_Nb2HF8\_9w Ho... 38 2.1  
 AA280664, AA280664 zs99f09.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.1  
 AA973566, AA973566 oo46f09.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 38 2.1  
 N27253, N27253 yx17g01.r1 Homo sapiens cDNA clone 262032 5'. 38 2.1  
 AA995707, AA995707 os29c09.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 38 2.1  
 AI016407, AI016407 ot72e09.s1 Soares\_total\_fetus\_Nb2HF8\_9w Ho... 38 2.1  
 N70619, N70619 za84a12.s1 Homo sapiens cDNA clone 299230 3'. 38 2.1  
 AA242923, AA242923 zr64g07.r1 Soares NhHMPu S1 Homo sapiens c... 38 2.1  
 AA938631, AA938631 oo96f07.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 38 2.1  
 AA985290, AA985290 am74g03.s1 Stratagene schizo brain S11 Hom... 38 2.1

AA690806, AA690806 vt25h10.r1 Barstead mouse myotubes MPLRB5 ... 377 e-103  
 AA155014, AA155014 mr99h05.r1 Stratagene mouse embryonic carc... 180 8e-44  
 AA269966, AA269966 va57d06.r1 Soares mouse 3NME12 5 Mus muscu... 172 2e-41  
 AA089195, AA089195 mo05h11.r1 Stratagene mouse lung 937302 Mu... 163 2e-38  
 AA466212, AA466212 vg86g02.r1 Barstead mouse pooled organs MP... 68 8e-10  
 AA423476, AA423476 ve76d07.r1 Soares mouse mammary gland NbMM... 60 2e-07  
 AA597213, AA597213 vo28a05.r1 Barstead mouse irradiated colon... 40 0.19  
 AA396266, AA396266 vb45c01.r1 Soares mouse lymph node NbMLN M... 40 0.19  
 AA967806, AA967806 uh05d06.r1 Soares mouse hypothalamus NMHy ... 38 0.75  
 AA591111, AA591111 vm12c06.r1 Knowles Solter mouse blastocyst... 38 0.75  
 W65797, W65797 me14g02.r1 Soares mouse embryo NbME13.5 14.5 M... 38 0.75  
 AA153891, AA153891 mq56e05.r1 Soares 2NbMT Mus musculus cDNA ... 38 0.75

AI019772, AI019772	ua90h02.r1 Soares mouse mammary gland NbMM...	36	3.0
AA472253, AA472253	vh10g05.r1 Soares mouse mammary gland NbMM...	36	3.0
AA230895, AA230895	mw14g07.r1 Soares mouse 3NME12 5 Mus muscu...	36	3.0
W18052, W18052	mb83g03.r1 Soares mouse p3NMF19.5 Mus musculus...	36	3.0
AA797681, AA797681	vx66c12.r1 Stratagene mouse skin (#937313)...	36	3.0
W66734, W66734	me26g05.r1 Soares mouse embryo NbME13.5 14.5 M...	36	3.0
AA968020, AA968020	uh07g01.r1 Soares mouse hypothalamus NMHy ...	36	3.0
AA051644, AA051644	mj55d12.r1 Soares mouse embryo NbME13.5 14...	36	3.0
AA162797, AA162797	mr29g09.r1 Soares mouse 3NbMS Mus musculus...	36	3.0
AA549644, AA549644	vk80f08.s1 Knowles Solter mouse 2 cell Mus...	36	3.0
AA273295, AA273295	vc01e01.r1 Soares mouse lymph node NbMLN M...	36	3.0
AA048480, AA048480	mj33d08.r1 Soares mouse embryo NbME13.5 14...	36	3.0
AA098207, AA098207	mn83d01.r1 Stratagene mouse Tcell 937311 M...	36	3.0
AA027381, AA027381	mi05c06.r1 Soares mouse placenta 4NbMP13.5...	36	3.0
AA544474, AA544474	vk33h06.r1 Soares mouse mammary gland NbMM...	36	3.0
AA416466, AA416466	vd15c09.s1 Knowles Solter mouse 2 cell Mus...	36	3.0
AA285999, AA285999	vb88h08.r1 Soares mouse 3NbMS Mus musculus...	36	3.0
AA175025, AA175025	ms85f06.r1 Soares mouse 3NbMS Mus musculus...	36	3.0
AA544386, AA544386	vk33f06.r1 Soares mouse mammary gland NbMM...	36	3.0
AA175557, AA175557	ms96g04.r1 Soares mouse 3NbMS Mus musculus...	36	3.0
AA711924, AA711924	vu59f09.r1 Soares mouse mammary gland NbMM...	36	3.0
AA734052, AA734052	vv22c10.r1 Stratagene mouse heart (#937316...	36	3.0
W53738, W53738	md12a12.r1 Soares mouse embryo NbME13.5 14.5 M...	36	3.0
AA611837, AA611837	vo82a06.r1 Barstead mouse myotubes MPLRB5 ...	36	3.0
AA879531, AA879531	vv96f06.r1 Soares mouse mammary gland NbMM...	36	3.0
AA288625, AA288625	vb23g09.r1 Soares mouse 3NbMS Mus musculus...	36	3.0
AA784124, AA784124	d2b06a1.f1 Aspergillus nidulans 24hr asexu...	38	0.67
AI044911, AI044911	UI-R-C1-kk-e-05-0-UI.s1 UI-R-C1 Rattus nor...	36	2.6
AA550452, AA550452	1605m3 gmbPfHB3.1, G. Roman Reddy Plasmodi...	36	2.6
F20017, ATTS6056	A. thaliana transcribed sequence; clone TAP...	36	2.6
AA786697, AA786697	k5d01a1.f1 Aspergillus nidulans 24hr asexu...	36	2.6
AA433457, AA433457	SW3ICA2345SK Brugia malayi infective larva...	36	2.6

SEQ ID NO:550

U66201, MMU66201	Mus musculus fibroblast growth factor homolo...	42	0.20
AF020738, AF020738	Mus musculus fibroblast growth factor-rela...	42	0.20
U66197, HSU66197	Human fibroblast growth factor homologous fa...	42	0.20
Z46966, MMIMOGN44	M.musculus mRNA for imogen 44.	40	0.80

AC004301, AC004301 *Drosophila melanogaster* DNA sequence (P1 D... 40 0.80  
 U86662, LEU86662 *Lycopersicon esculentum* VPS41 (tVPS41) mRNA,... 40 0.80  
 Y14330, HSY14330 *Homo sapiens* partial mRNA for jagged2 protein 38 3.2  
 AF003521, AF003521 *Homo sapiens* Jagged 2 mRNA, complete cds 38 3.2  
 AF029778, AF029778 *Homo sapiens* Jagged2 (JAG2) mRNA, complete... 38 3.2  
 AF020201, AF020201 *Homo sapiens* Jagged 2 mRNA, complete cds 38 3.2  
 Z71523, SCYNL247W *S.cerevisiae* chromosome XIV reading frame ... 38 3.2  
 AF029779, AF029779 *Homo sapiens* hJAG2.del-E6 (JAG2) mRNA, alt... 38 3.2  
 U70049, RNU70049 *Rattus norvegicus* jagged2 precursor gene, pa... 38 3.2  
 X96722, SCCHXIVL *S.cerevisiae* DNA region from chromosome XIV... 38 3.2  
 AF005938, AF005938 *Cavia porcellus* L-type voltage-dependent c... 38 3.2  
 X78972, SBSTRBF *S.bluensis* ISP 5564 genes strB and strF 38 3.2  
 X94912, HSPR22 *H.sapiens* Pr22 gene 38 3.2

## HUMAN ESTs

AA860926, AA860926 ak22d06.s1 Soares testis NHT *Homo sapiens* ... 650 0.0  
 AA348243, AA348243 EST54707 Hippocampus I *Homo sapiens* cDNA 5... 513 e-144  
 AA551799, AA551799 nk04a11.s1 NCI\_CGAP\_Co2 *Homo sapiens* cDNA ... 363 2e-98  
 AA327309, AA327309 EST30621 Colon I *Homo sapiens* cDNA 5' end 353 2e-95  
 AA344913, AA344913 EST50856 Gall bladder II *Homo sapiens* cDNA... 337 1e-90  
 AA121174, AA121174 zl88g08.s1 Stratagene colon (#937204) *Homo*... 317 1e-84  
 AA121198, AA121198 zl88g08.r1 Stratagene colon (#937204) *Homo*... 317 1e-84  
 AA001561, AA001561 ze46e07.s1 Soares retina N2b4HR *Homo sapie*... 42 0.098  
 AI005204, AI005204 ou60c12.x1 NCI\_CGAP\_Br2 *Homo sapiens* cDNA ... 40 0.39  
 AA757360, AA757360 ah98a01.s1 Soares NFL T GBC S1 *Homo sapien*... 40 0.39  
 AI005324, AI005324 ou13h07.x1 Soares\_NFL\_T\_GBC\_S1 *Homo sapien*... 40 0.39  
 AA416559, AA416559 zu18c03.r1 Soares NhHMPu S1 *Homo sapiens* c... 40 0.39  
 AA262162, AA262162 zs25b12.r1 NCI\_CGAP\_GCB1 *Homo sapiens* cDNA... 40 0.39  
 AA824270, AA824270 aj29f01.s1 Soares testis NHT *Homo sapiens* ... 40 0.39  
 AA826741, AA826741 85f12.s1 NCI\_CGAP\_Pr24 *Homo sapiens* cDNA... 40 0.39  
 AA813115, AA813115 aj44d06.s1 Soares testis NHT *Homo sapiens* ... 40 0.39  
 AA403143, AA403143 zv66d01.r1 Soares total fetus Nb2HF8 9w Ho... 40 0.39  
 AA725024, AA725024 ah97h10.s1 Soares NFL T GBC S1 *Homo sapien*... 40 0.39  
 AA804907, AA804907 oa89a01.s1 NCI\_CGAP\_GCB1 *Homo sapiens* cDNA... 40 0.39  
 AA628544, AA628544 af27h12.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.39  
 AA618498, AA618498 np30a11.s1 NCI\_CGAP\_Pr22 *Homo sapiens* cDNA... 40 0.39  
 AA503727, AA503727 ne49g02.s1 NCI\_CGAP\_Co3 *Homo sapiens* cDNA ... 40 0.39  
 AA460961, AA460961 zx63b07.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.39  
 AA770473, AA770473 ah89h06.s1 Soares NFL T GBC S1 *Homo sapien*... 40 0.39  
 AA759377, AA759377 ah54a10.s1 Soares testis NHT *Homo sapiens* ... 40 0.39  
 AA629243, AA629243 zu77e03.s1 Soares testis NHT *Homo sapiens* ... 40 0.39  
 AA903406, AA903406 ok62c11.s1 NCI\_CGAP\_GC4 *Homo sapiens* cDNA ... 40 0.39  
 AA215903, AA215903 hp0042.seq.F Fetal heart, Lambda ZAP Expre... 40 0.39

AA160827, AA160827 zo62e01.s1 Stratagene pancreas (#937208) H... 40 0.39  
 AA577174, AA577174 nm86e11.s1 NCI\_CGAP\_Co9 Homo sapiens cDNA ... 40 0.39  
 AA969632, AA969632 op38h05.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 40 0.39  
 N72025, N72025 yz96g02.s1 Homo sapiens cDNA clone 290930 3'. 40 0.39  
 AA974988, AA974988 on59b06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 40 0.39  
 W32428, W32428 zc05c12.s1 Soares parathyroid tumor NbHPA Homo... 40 0.39  
 N21678, N21678 yx63g01.s1 Soares melanocyte 2NbHM Homo sapien... 40 0.39  
 AA860208, AA860208 ak48c10.s1 Soares testis NHT Homo sapiens ... 40 0.39  
 AA814296, AA814296 nz07d08.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.39  
 AA806381, AA806381 oc22g05.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.39  
 AA435587, AA435587 zt85d07.s1 Soares testis NHT Homo sapiens ... 40 0.39  
 W45005, W45005 zc05c12.r1 Soares parathyroid tumor NbHPA Homo... 40 0.39  
 AA393904, AA393904 zt85e06.r1 Soares testis NHT Homo sapiens ... 40 0.39  
 AA759038, AA759038 ah75h11.s1 Soares testis NHT Homo sapiens ... 40 0.39  
 AA927863, AA927863 om18a08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 40 0.39  
 AA461270, AA461270 zx63b07.r1 Soares total fetus Nb2HF8 9w Ho... 40 0.39  
 AA417295, AA417295 zu18c03.s1 Soares NhHMPu S1 Homo sapiens c... 40 0.39  
 W47466, W47466 zc34h02.r1 Soares senescent fibroblasts NbHSF ... 40 0.39  
 AA262229, AA262229 zs25b12.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.39  
 AA587486, AA587486 nn84e09.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.39  
 AA401079, AA401079 zv66d01.s1 Soares total fetus Nb2HF8 9w Ho... 40 0.39  
 AA872272, AA872272 oh72a11.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.39  
 W47341, W47341 zc34h02.s1 Soares senescent fibroblasts NbHSF ... 40 0.39  
 N72024, N72024 yz96g01.s1 Homo sapiens cDNA clone 290928 3'. 40 0.39  
 N35076, N35076 yy19b08.s1 Homo sapiens cDNA clone 271671 3'. 40 0.39  
 AI040354, AI040354 oy33d12.x1 Soares\_parathyroid\_tumor\_NbHPA ... 40 0.39  
 AA946650, AA946650 oq38h09.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.39  
 AA022495, AA022495 ze70e04.s1 Soares fetal heart NbHH19W Homo... 40 0.39  
 AA873216, AA873216 oh70f04.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.39  
 R82551, R82551 yj19d06.r1 Homo sapiens cDNA clone 149195 5'. 38 1.5  
 H30248, H30248 yp42a01.s1 Homo sapiens cDNA clone 190056 3'. 38 1.5  
 AA161105, AA161105 zo58c05.s1 Stratagene pancreas (#937208) H... 38 1.5  
 AA948291, AA948291 oq34d02.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 38 1.5  
 AA416734, AA416734 zu08c01.s1 Soares testis NHT Homo sapiens ... 38 1.5  
 AA431486, AA431486 zw72g01.s1 Soares testis NHT Homo sapiens ... 38 1.5  
 AA416815, AA416815 zu08c01.r1 Soares testis NHT Homo sapiens ... 38 1.5

AA616807, AA616807 vn68c05.r1 Barstead mouse irradiated colon... 180 6e-44  
 AA467482, AA467482 ve01a10.r1 Soares mouse NbMH Mus musculus ... 40 0.14  
 AA543280, AA543280 vj80h05.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA009071, AA009071 mg87b11.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 AA106439, AA106439 ml59a08.r1 Stratagene mouse testis (#93730... 40 0.14

AA014768, AA014768 mi66h04.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 AA881111, AA881111 vz06e09.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA049011, AA049011 mj48c09.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 AA185487, AA185487 mt62c07.r1 Soares 2NbMT Mus musculus cDNA ... 40 0.14  
 AA763419, AA763419 vw54a12.r1 Soares mouse mammary gland NMLM... 40 0.14  
 AA016868, AA016868 mh36e12.r1 Soares mouse placenta 4NbMP13.5... 40 0.14  
 AA833479, AA833479 uc91c03.r1 Soares mouse uterus NMPu Mus mu... 40 0.14  
 AA790448, AA790448 vw04f09.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA711859, AA711859 vu59c10.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA469884, AA469884 vf71g10.r1 Barstead mouse pooled organs MP... 40 0.14  
 AA230758, AA230758 my32g10.r1 Barstead mouse pooled organs MP... 40 0.14  
 AA497479, AA497479 vh29b12.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA138067, AA138067 mq37c11.r1 Barstead MPLRB1 Mus musculus cD... 40 0.14  
 AA103139, AA103139 mo17f05.r1 Life Tech mouse embryo 13 5dpc ... 40 0.14  
 AI047077, AI047077 uh61g06.r1 Soares mouse embryonic stem cel... 40 0.14  
 AI048515, AI048515 uh61e08.r1 Soares mouse embryonic stem cel... 40 0.14  
 W61547, W61547 md57a02.r1 Soares mouse embryo NbME13.5 14.5 M... 40 0.14  
 AA007762, AA007762 mg76b03.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 AA000268, AA000268 mg32e09.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 AA475425, AA475425 vh20g09.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA014223, AA014223 mh20a03.r1 Soares mouse placenta 4NbMP13.5... 40 0.14  
 AA797372, AA797372 vw27b08.r1 Soares mouse mammary gland NbMM... 40 0.14  
 AA106301, AA106301 ml81a09.r1 Stratagene mouse kidney (#93731... 40 0.14  
 AA033481, AA033481 mi42b07.r1 Soares mouse embryo NbME13.5 14... 40 0.14  
 W77724, W77724 me84h06.r1 Soares mouse embryo NbME13.5 14.5 M... 40 0.14  
 W83172, W83172 mf09a06.r1 Soares mouse p3NMF19.5 Mus musculus... 40 0.14  
 AA038869, AA038869 mi95b10.r1 Soares mouse p3NMF19.5 Mus musc... 40 0.14  
 AA068686, AA068686 mm59a03.r1 Stratagene mouse embryonic carc... 38 0.55  
 AA111190, AA111190 mp66b11.r1 Soares 2NbMT Mus musculus cDNA ... 36 2.2  
 AA840087, AA840087 uc99h12.r1 Soares mouse uterus NMPu Mus mu... 36 2.2  
 AA239210, AA239210 mx89e02.r1 Soares mouse NML Mus musculus c... 36 2.2  
 AA824205, AA824205 vy20g08.r1 Stratagene mouse macrophage (#9... 36 2.2  
 C87249, C87249 Mus musculus fertilized egg cDNA 3'-end seque... 36 2.2  
 AA089210, AA089210 mo05d10.r1 Stratagene mouse lung 937302 Mu... 36 2.2  
 AA711873, AA711873 vu28e06.r1 Barstead mouse myotubes MPLRB5 ... 36 2.2  
 AA793845, AA793845 vr35e12.r1 Barstead mouse myotubes MPLRB5 ... 36 2.2  
 AA645119, AA645119 vs72d03.r1 Stratagene mouse skin (#937313)... 36 2.2  
 AA967316, AA967316 vj47a03.r1 Stratagene mouse skin (#937313)... 36 2.2  
 W87202, W87202 mf55g08.r1 Soares mouse embryo NbME13.5 14.5 M... 36 2.2  
 AA218431, AA218431 my07e05.r1 Barstead mouse lung MPLRB2 Mus ... 36 2.2  
 AA796056, AA796056 vo65d01.r1 Soares mouse mammary gland NbMM... 36 2.2  
 AA542324, AA542324 vk53e07.r1 Stratagene mouse Tcell 937311 M... 36 2.2  
 AA530735, AA530735 vj32g11.r1 Stratagene mouse diaphragm (#93... 36 2.2  
 AI047609, AI047609 uh63g07.r1 Soares mouse embryonic stem cel... 36 2.2  
 AA591243, AA591243 vm18c04.r1 Knowles Solter mouse blastocyst... 36 2.2



AA856298, AA856298 vw99b01.rl Soares 2NbMT Mus musculus cDNA ... 36 2.2  
 AA966976, AA966976 ua38f11.rl Soares mouse mammary gland NbMM... 36 2.2

AA957268, AA957268 UI-R-E1-fq-e-06-0-UI.s1 UI-R-E1 Rattus nor... 42 0.031  
 AA801145, AA801145 EST190642 Normalized rat ovary, Bento Soar... 38 0.48  
 AI012760, AI012760 EST207211 Normalized rat placenta, Bento S... 38 0.48  
 AA874930, AA874930 UI-R-E0-ci-b-05-0-UI.s1 UI-R-E0 Rattus nor... 38 0.48  
 C82607, C82607 Oryctolagus cuniculus corneal endothelial cDN... 38 0.48  
 AA859865, AA859865 UI-R-E0-cc-b-04-0-UI.s1 UI-R-E0 Rattus nor... 38 0.48  
 C83463, C83463 Oryctolagus cuniculus corneal endothelial cDN... 38 0.48  
 AA801144, AA801144 EST190641 Normalized rat ovary, Bento Soar... 38 0.48  
 AA859448, AA859448 UI-R-A0-bf-b-01-0-UI.s1 UI-R-A0 Rattus nor... 38 0.48  
 AI009631, AI009631 EST204082 Normalized rat lung, Bento Soare... 38 0.48  
 AI009035, AI009035 EST203486 Normalized rat embryo, Bento Soa... 38 0.48  
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 H32878, H32878 EST108396 Rat PC-12 cells, untreated Rattus sp... 36 1.9  
 AA943364, AA943364 EST198863 Normalized rat brain, Bento Soar... 36 1.9  
 Z32602, ATTS2730 A. thaliana transcribed sequence; clone PAP... 36 1.9  
 Z33974, ATTS3035 A. thaliana transcribed sequence; clone PAP... 36 1.9  
 Z32603, ATTS2731 A. thaliana transcribed sequence; clone PAP... 36 1.9  
 AA660859, AA660859 00754 MtRHE Medicago truncatula cDNA 5' si... 36 1.9  
 AA842765, AA842765 M-EST080 Sugarcane mature stalk Saccharum ... 36 1.9  
 AA125602, AA125602 JM00M011.QM3 Miracidia Sjc 3/96 Schistosom... 36 1.9  
 AA785775, AA785775 h4b05a1.fl Aspergillus nidulans 24hr asexu... 36 1.9

SEQ ID NO:551

U66201, MMU66201 Mus musculus fibroblast growth factor homolo... 42 0.36  
 AF020738, AF020738 Mus musculus fibroblast growth factor-rela... 42 0.36  
 U66197, HSU66197 Human fibroblast growth factor homologous fa... 42 0.36  
 U86662, LEU86662 Lycopersicon esculentum VPS41 (tVPS41) mRNA,... 40 1.4  
 U85773, HSU85773 Human phosphomannomutase (PMM2) mRNA, comple... 40 1.4  
 Z46966, MMIMOGN44 M.musculus mRNA for imogen 44. 40 1.4  
 AC004301, AC004301 Drosophila melanogaster DNA sequence (P1 D... 40 1.4

#### HUMAN ESTs

W22160, W22160 63A6 Human retina cDNA Tsp509I-cleaved sublibr... 791 0.0  
 AA860926, AA860926 ak22d06.s1 Soares testis NHT Homo sapiens ... 650 0.0

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 AA327309, AA327309 EST30621 Colon I Homo sapiens cDNA 5' end 353 4e-95  
 AA344913, AA344913 EST50856 Gall bladder II Homo sapiens cDNA... 337 2e-90  
 AA121174, AA121174 zl88g08.s1 Stratagene colon (#937204) Homo... 317 2e-84  
 AA121198, AA121198 zl88g08.r1 Stratagene colon (#937204) Homo... 317 2e-84  
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 AA877455, AA877455 ob33g01.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.68  
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 AA041240, AA041240 zf07g05.r1 Soares fetal heart NbHH19W Homo... 40 0.68  
 AA514777, AA514777 ni24b01.s1 NCI\_CGAP\_Co4 Homo sapiens cDNA ... 40 0.68  
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 AA888147, AA888147 04h11.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 40 0.68  
 AA172158, AA172158 zp29a01.s1 Stratagene neuroepithelium (#93... 40 0.68  
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 N98472, N98472 yy65a04.r1 Homo sapiens cDNA clone 278382 5'. 38 2.7  
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 R14449, R14449 yf81h09.r1 Homo sapiens cDNA clone 29034 5'. 38 2.7  
 AA431486, AA431486 zw72g01.s1 Soares testis NHT Homo sapiens ... 38 2.7

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 AA185487, AA185487 mt62c07.r1 Soares 2NbMT Mus musculus cDNA ... 40 0.24  
 AA230758, AA230758 my32g10.r1 Barstead mouse pooled organs MP... 40 0.24  
 AA276740, AA276740 vc42a12.r1 Soares mouse 3NbMS Mus musculus... 40 0.24  
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 AA068686, AA068686 mm59a03.r1 Stratagene mouse embryonic carc... 38 0.97  
 AA139459, AA139459 mq86a03.r1 Stratagene mouse melanoma (#937... 38 0.97  
 AA881111, AA881111 vz06e09.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA692425, AA692425 vt59b05.r1 Barstead mouse irradiated colon... 36 3.8  
 AA049011, AA049011 mj48c09.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AA966976, AA966976 ua38f11.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AI047077, AI047077 uh61g06.r1 Soares mouse embryonic stem cel... 36 3.8  
 AA103139, AA103139 mo17f05.r1 Life Tech mouse embryo 13 5dpc ... 36 3.8

AA840087, AA840087 uc99h12.r1 Soares mouse uterus NMPu Mus mu... 36 3.8  
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 AA007762, AA007762 mg76b03.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AA014223, AA014223 mh20a03.r1 Soares mouse placenta 4NbMP13.5... 36 3.8  
 AA591243, AA591243 vm18c04.r1 Knowles Solter mouse blastocyst... 36 3.8  
 AA921560, AA921560 vy52c06.r1 Stratagene mouse lung 937302 Mu... 36 3.8  
 W20935, W20935 mb96c07.r1 Soares mouse p3NMF19.5 Mus musculus... 36 3.8  
 AA793845, AA793845 vr35e12.r1 Barstead mouse myotubes MPLRB5 ... 36 3.8  
 AA856298, AA856298 vw99b01.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.8  
 AA833479, AA833479 uc91c03.r1 Soares mouse uterus NMPu Mus mu... 36 3.8  
 AA218431, AA218431 my07e05.r1 Barstead mouse lung MPLRB2 Mus ... 36 3.8  
 AA089210, AA089210 mo05d10.r1 Stratagene mouse lung 937302 Mu... 36 3.8  
 AI047609, AI047609 uh63g07.r1 Soares mouse embryonic stem cel... 36 3.8  
 AA797372, AA797372 vw27b08.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA138067, AA138067 mq37c11.r1 Barstead MPLRB1 Mus musculus cD... 36 3.8  
 W83172, W83172 mf09a06.r1 Soares mouse p3NMF19.5 Mus musculus... 36 3.8  
 AA542324, AA542324 vk53e07.r1 Stratagene mouse Tcell 937311 M... 36 3.8  
 AA967316, AA967316 vj47a03.r1 Stratagene mouse skin (#937313)... 36 3.8  
 AI035925, AI035925 ub49e05.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA497479, AA497479 vh29b12.r1 Soares mouse mammary gland NbMM... 36 3.8  
 W87202, W87202 mf55g08.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.8  
 AA016868, AA016868 mh36e12.r1 Soares mouse placenta 4NbMP13.5... 36 3.8  
 AA467482, AA467482 ve01a10.r1 Soares mouse NbMH Mus musculus ... 36 3.8  
 AA014768, AA014768 mi66h04.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AA711859, AA711859 vu59c10.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA530735, AA530735 vj32g11.r1 Stratagene mouse diaphragm (#93... 36 3.8  
 AA009071, AA009071 mg87b11.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AA711873, AA711873 vu28e06.r1 Barstead mouse myotubes MPLRB5 ... 36 3.8  
 AA645119, AA645119 vs72d03.r1 Stratagene mouse skin (#937313)... 36 3.8  
 AA106301, AA106301 ml81a09.r1 Stratagene mouse kidney (#93731... 36 3.8  
 AA111190, AA111190 mp66b11.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.8  
 C87249, C87249 Mus musculus fertilized egg cDNA 3'-end seque... 36 3.8  
 AA796056, AA796056 vo65d01.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA230661, AA230661 mw15f08.r1 Soares mouse 3NME12 5 Mus muscu... 36 3.8  
 AA033481, AA033481 mi42b07.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AA000268, AA000268 mg32e09.r1 Soares mouse embryo NbME13.5 14... 36 3.8  
 AI048515, AI048515 uh61e08.r1 Soares mouse embryonic stem cel... 36 3.8  
 W61547, W61547 md57a02.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.8  
 AA790448, AA790448 vw04f09.r1 Soares mouse mammary gland NbMM... 36 3.8  
 AA824205, AA824205 vy20g08.r1 Stratagene mouse macrophage (#9... 36 3.8  
 AA475425, AA475425 vh20g09.r1 Soares mouse mammary gland NbMM... 36 3.8  
 W62989, W62989 md88h12.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.8  
 W77724, W77724 me84h06.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.8  
 AA239210, AA239210 mx89e02.r1 Soares mouse NML Mus musculus c... 36 3.8

AA957268, AA957268 UI-R-E1-fq-e-06-0-UI.s1 UI-R-E1 Rattus nor... 42 0.055  
 AA891284, AA891284 EST195087 Normalized rat heart, Bento Soar... 40 0.22  
 Z83055, RNZ83055 R.norvegicus mRNA; expressed sequence tag; ... 40 0.22  
 AI010967, AI010967 EST205418 Normalized rat muscle, Bento Soa... 40 0.22  
 AA852049, AA852049 EST194818 Normalized rat spleen, Bento Soa... 40 0.22  
 H33489, H33489 EST109542 Rat PC-12 cells, NGF-treated (9 days... 40 0.22  
 AA799616, AA799616 EST189113 Normalized rat heart, Bento Soar... 40 0.22  
 Z83044, RNZ83044 R.norvegicus mRNA; expressed sequence tag; ... 40 0.22  
 AA660819, AA660819 00713 MtRHE Medicago truncatula cDNA 5' 38 0.86  
 AA956139, AA956139 UI-R-E1-fi-h-08-0-UI.s1 UI-R-E1 Rattus nor... 38 0.86  
 T00613, T00613 wEST01334 Caenorhabditis elegans cDNA clone CE... 38 0.86  
 AA785775, AA785775 h4b05a1.f1 Aspergillus nidulans 24hr asexu... 36 3.4  
 AA660859, AA660859 00754 MtRHE Medicago truncatula cDNA 5' si... 36 3.4  
 AA943364, AA943364 EST198863 Normalized rat brain, Bento Soar... 36 3.4  
 C68472, C68472 C.elegans cDNA clone yk305a12 : 5' end, singl... 36 3.4  
 AA800635, AA800635 EST190132 Normalized rat lung, Bento Soare... 36 3.4  
 Z32602, ATTS2730 A. thaliana transcribed sequence; clone PAP... 36 3.4  
 Z32603, ATTS2731 A. thaliana transcribed sequence; clone PAP... 36 3.4  
 AA842765, AA842765 M-EST080 Sugarcane mature stalk Saccharum ... 36 3.4  
 AA955567, AA955567 UI-R-E1-fa-a-08-0-UI.s1 UI-R-E1 Rattus nor... 36 3.4  
 H32878, H32878 EST108396 Rat PC-12 cells, untreated Rattus sp... 36 3.4  
 Z33974, ATTS3035 A. thaliana transcribed sequence; clone PAP... 36 3.4  
 D45997, RICS10346A Rice cDNA, partial sequence (S10346\_1A). 36 3.4  
 AA125602, AA125602 JM00M011.QM3 Miracidia Sjc 3/96 Schistosom... 36 3.4  
 AA800634, AA800634 EST190131 Normalized rat lung, Bento Soare... 36 3.4  
 D46069, RICS10475A Rice cDNA, partial sequence (S10475\_1A). 36 3.4

SEQ ID NO:552

U66201, MMU66201 Mus musculus fibroblast growth factor homolo... 42 0.38  
 AF020738, AF020738 Mus musculus fibroblast growth factor-rela... 42 0.38  
 U66197, HSU66197 Human fibroblast growth factor homologous fa... 42 0.38  
 Z46966, MMIMOGN44 M.musculus mRNA for imogen 44. 40 1.5  
 U86662, LEU86662 Lycopersicon esculentum VPS41 (tVPS41) mRNA.... 40 1.5  
 U85773, HSU85773 Human phosphomannomutase (PMM2) mRNA, comple... 40 1.5

#### HUMAN ESTs

W22160, W22160 63A6 Human retina cDNA Tsp509I-cleaved sublibr... 791 0.0  
 AA860926, AA860926 ak22d06.s1 Soares testis NHT Homo sapiens ... 650 0.0

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 AA551799, AA551799 nk04a11.s1 NCI\_CGAP\_Co2 Homo sapiens cDNA ... 363 4e-98  
 AA327309, AA327309 EST30621 Colon I Homo sapiens cDNA 5' end 353 4e-95  
 AA344913, AA344913 EST50856 Gall bladder II Homo sapiens cDNA... 337 2e-90  
 AA121198, AA121198 zl88g08.r1 Stratagene colon (#937204) Homo... 317 2e-84  
 AA121174, AA121174 zl88g08.s1 Stratagene colon (#937204) Homo... 317 2e-84  
 AA001561, AA001561 ze46e07.s1 Soares retina N2b4HR Homo sapie... 42 0.18  
 AA172158, AA172158 zp29a01.s1 Stratagene neuroepithelium (#93... 40 0.72  
 N35888, N35888 yy28b05.s1 Homo sapiens cDNA clone 272529 3'. 40 0.72  
 AA877455, AA877455 ob33g01.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.72  
 AA573297, AA573297 nk98d09.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.72  
 AA040802, AA040802 zf07g05.s1 Soares fetal heart NbHH19W Homo... 40 0.72  
 R02514, R02514 ye70b08.r1 Homo sapiens cDNA clone 123063 5'. 40 0.72  
 AA514777, AA514777 ni24b01.s1 NCI\_CGAP\_Co4 Homo sapiens cDNA ... 40 0.72  
 AA041240, AA041240 zf07g05.r1 Soares fetal heart NbHH19W Homo... 40 0.72  
 AA888147, AA888147 04h11.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 40 0.72  
 AA039536, AA039536 zk39h10.s1 Soares pregnant uterus NbHPU Ho... 40 0.72  
 AA416734, AA416734 zu08c01.s1 Soares testis NHT Homo sapiens ... 38 2.8  
 N25839, N25839 yx22e05.r1 Homo sapiens cDNA clone 262496 5'. 38 2.8  
 AA431486, AA431486 zw72g01.s1 Soares testis NHT Homo sapiens ... 38 2.8  
 N98472, N98472 yy65a04.r1 Homo sapiens cDNA clone 278382 5'. 38 2.8  
 AA416815, AA416815 zu08c01.r1 Soares testis NHT Homo sapiens ... 38 2.8  
 AA852281, AA852281 NHTBCae11g05r1 Normal Human Trabecular Bon... 38 2.8  
 AA948291, AA948291 oq34d02.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 38 2.8

AA616807, AA616807 vn68c05.r1 Barstead mouse irradiated colon... 180 1e-43  
 AA185487, AA185487 mt62c07.r1 Soares 2NbMT Mus musculus cDNA ... 40 0.26  
 AA276740, AA276740 vc42a12.r1 Soares mouse 3NbMS Mus musculus... 40 0.26  
 AA469884, AA469884 vf71g10.r1 Barstead mouse pooled organs MP... 40 0.26  
 AA230758, AA230758 my32g10.r1 Barstead mouse pooled organs MP... 40 0.26  
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 AA068686, AA068686 mm59a03.r1 Stratagene mouse embryonic carc... 38 1.0  
 AA218431, AA218431 my07e05.r1 Barstead mouse lung MPLRB2 Mus ... 36 4.0  
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 AI035925, AI035925 ub49e05.r1 Soares mouse mammary gland NbMM... 36 4.0  
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 AA530735, AA530735 vj32g11.r1 Stratagene mouse diaphragm (#93... 36 4.0

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AA793845, AA793845 vr35e12.r1 Barstead mouse myotubes MPLRB5 ... 36 4.0  
AA840087, AA840087 uc99h12.r1 Soares mouse uterus NMPu Mus mu... 36 4.0  
AA711873, AA711873 vu28e06.r1 Barstead mouse myotubes MPLRB5 ... 36 4.0  
AA790448, AA790448 vw04f09.r1 Soares mouse mammary gland NbMM... 36 4.0  
AA106301, AA106301 ml81a09.r1 Stratagene mouse kidney (#93731... 36 4.0  
AA543280, AA543280 vj80h05.r1 Soares mouse mammary gland NbMM... 36 4.0  
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AA921560, AA921560 vy52c06.r1 Stratagene mouse lung 937302 Mu... 36 4.0  
AA692425, AA692425 vt59b05.r1 Barstead mouse irradiated colon... 36 4.0  
AA833479, AA833479 uc91c03.r1 Soares mouse uterus NMPu Mus mu... 36 4.0  
AA824205, AA824205 vy20g08.r1 Stratagene mouse macrophage (#9... 36 4.0  
AA033481, AA033481 mi42b07.r1 Soares mouse embryo NbME13.5 14... 36 4.0  
W61547, W61547 md57a02.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.0  
AA796056, AA796056 vo65d01.r1 Soares mouse mammary gland NbMM... 36 4.0  
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AA239210, AA239210 mx89e02.r1 Soares mouse NML Mus musculus c... 36 4.0  
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AA089210, AA089210 mo05d10.r1 Stratagene mouse lung 937302 Mu... 36 4.0  
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AA009071, AA009071 mg87b11.r1 Soares mouse embryo NbME13.5 14... 36 4.0  
AA475425, AA475425 vh20g09.r1 Soares mouse mammary gland NbMM... 36 4.0  
AA230661, AA230661 mwl5f08.r1 Soares mouse 3NME12 5 Mus muscu... 36 4.0  
AA138067, AA138067 mq37c11.r1 Barstead MPLRB1 Mus musculus cD... 36 4.0  
W83172, W83172 mf09a06.r1 Soares mouse p3NMF19.5 Mus musculus... 36 4.0  
AA797372, AA797372 vw27b08.r1 Soares mouse mammary gland NbMM... 36 4.0  
AA711859, AA711859 vu59c10.r1 Soares mouse mammary gland NbMM... 36 4.0  
AA967316, AA967316 vj47a03.r1 Stratagene mouse skin (#937313)... 36 4.0  
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AA103139, AA103139 mo17f05.r1 Life Tech mouse embryo 13 5dpc ... 36 4.0  
AA014223, AA014223 mh20a03.r1 Soares mouse placenta 4NbMP13.5... 36 4.0  
W62989, W62989 md88h12.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.0  
W20935, W20935 mb96c07.r1 Soares mouse p3NMF19.5 Mus musculus... 36 4.0  
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AA856298, AA856298 vw99b01.r1 Soares 2NbMT Mus musculus cDNA ... 36 4.0  
AA014768, AA014768 mi66h04.r1 Soares mouse embryo NbME13.5 14... 36 4.0  
AA497479, AA497479 vh29b12.r1 Soares mouse mammary gland NbMM... 36 4.0  
AA049011, AA049011 mj48c09.r1 Soares mouse embryo NbME13.5 14... 36 4.0  
AA016868, AA016868 mh36e12.r1 Soares mouse placenta 4NbMP13.5... 36 4.0  
AI047609, AI047609 uh63g07.r1 Soares mouse embryonic stem cel... 36 4.0  
AA591243, AA591243 vml8c04.r1 Knowles Solter mouse blastocyst... 36 4.0

AA957268, AA957268 UI-R-E1-fq-e-06-0-UI.s1 UI-R-E1 Rattus nor... 42 0.058  
T00613, T00613 wEST01334 Caenorhabditis elegans cDNA clone CE... 38 0.90  
AA956139, AA956139 UI-R-E1-fi-h-08-0-UI.s1 UI-R-E1 Rattus nor... 38 0.90  
AA660819, AA660819 00713 MtRHE Medicago truncatula cDNA 5' 38 0.90  
AA125602, AA125602 JM00M011.QM3 Miracidia Sjc 3/96 Schistosom... 36 3.6  
Z33974, ATTS3035 A. thaliana transcribed sequence; clone PAP... 36 3.6  
C68472, C68472 C.elegans cDNA clone yk305a12 : 5' end, singl... 36 3.6  
AA785775, AA785775 h4b05a1.f1 Aspergillus nidulans 24hr asexu... 36 3.6  
Z32602, ATTS2730 A. thaliana transcribed sequence; clone PAP... 36 3.6  
AA943364, AA943364 EST198863 Normalized rat brain, Bento Soar... 36 3.6  
Z32603, ATTS2731 A. thaliana transcribed sequence; clone PAP... 36 3.6  
AA842765, AA842765 M-EST080 Sugarcane mature stalk Saccharum ... 36 3.6  
D45997, RICS10346A Rice cDNA, partial sequence (S10346\_1A). 36 3.6  
AA955567, AA955567 UI-R-E1-fa-a-08-0-UI.s1 UI-R-E1 Rattus nor... 36 3.6  
AA800634, AA800634 EST190131 Normalized rat lung, Bento Soare... 36 3.6  
AA660859, AA660859 00754 MtRHE Medicago truncatula cDNA 5' si... 36 3.6  
AA800635, AA800635 EST190132 Normalized rat lung, Bento Soare... 36 3.6  
D46069, RICS10475A Rice cDNA, partial sequence (S10475\_1A). 36 3.6  
H32878, H32878 EST108396 Rat PC-12 cells, untreated Rattus sp... 36 3.6

SEQ ID NO:553

Z99297, HS262D12 Homo sapiens DNA sequence from PAC 262D12 o... 1963 0.0  
Z81540, CEF46B3 Caenorhabditis elegans cosmid F46B3, complet... 40 0.89  
U67488, U67488 Methanococcus jannaschii section 30 of 150 of ... 38 3.5  
AE000786, AE000786 Borrelia burgdorferi plasmid lp28-2, compl... 38 3.5  
L02053, OMMGSHTR1 Ommastrephes sloani glutathione transferase... 38 3.5  
AC004521, ATAC004521 Arabidopsis thaliana chromosome II BAC F... 38 3.5  
L41250, DROGPDHN Drosophila nebulosa glycerol-3-phosphate deh... 38 3.5  
AE000619, HPAE000619 Helicobacter pylori section 97 of 134 of... 38 3.5  
U39720, Mycoplasma genitalium ackA, licA, mucB, rpL10, rpL32... 38 3.5  
AC004533, HUAC004533 Homo sapiens Chromosome 16 BAC clone CIT... 38 3.5  
U62292, HSU62292 Human elastin (ELN) gene, partial cds 38 3.5

#### HUMAN ESTs

W02630, W02630 za52c02.r1 Soares fetal liver spleen 1NFLS Hom... 1009 0.0  
AA557183, AA557183 nl74f12.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 874 0.0  
AA761171, AA761171 nz09e11.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 866 0.0  
AA976975, AA976975 oq26g11.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 854 0.0  
AA449515, AA449515 zx06b11.r1 Soares total fetus Nb2HF8 9w Ho... 848 0.0

AA678392, AA678392 zi26h10.s1 Soares fetal liver spleen 1NFLS... 848 0.0  
AA909198, AA909198 ol12d06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 831 0.0  
W79208, W79208 zd79g05.r1 Soares fetal heart NbHH19W Homo sap... 813 0.0  
W03125, W03125 za53c02.r1 Soares fetal liver spleen 1NFLS Hom... 807 0.0  
W94750, W94750 ze13h08.r1 Soares fetal heart NbHH19W Homo sap... 785 0.0  
AA354894, AA354894 EST63217 Jurkat T-cells V Homo sapiens cDN... 771 0.0  
H70075, H70075 yr92b03.r1 Homo sapiens cDNA clone 212717 5'. 745 0.0  
W77859, W77859 zd70b08.r1 Soares fetal heart NbHH19W Homo sap... 728 0.0  
AA425424, AA425424 zw48f03.s1 Soares total fetus Nb2HF8 9w Ho... 718 0.0  
AA476893, AA476893 zu29f09.r1 Soares ovary tumor NbHOT Homo s... 688 0.0  
AA456676, AA456676 aa01h02.s1 Soares NhHMPu S1 Homo sapiens c... 688 0.0  
AA662309, AA662309 nu97c11.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 668 0.0  
W72135, W72135 zd70b08.s1 Soares fetal heart NbHH19W Homo sap... 650 0.0  
N74362, N74362 za52c02.s1 Homo sapiens cDNA clone 296162 3'. 622 e-176  
N66917, N66917 za47d09.s1 Homo sapiens cDNA clone 295697 3'. 585 e-165  
AA251287, AA251287 zs04c06.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 583 e-164  
AA971082, AA971082 op70h01.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 567 e-160  
W78165, W78165 zd79g05.s1 Soares fetal heart NbHH19W Homo sap... 565 e-159  
AA253290, AA253290 zr71g03.r1 Soares NhHMPu S1 Homo sapiens c... 559 e-157  
AA729063, AA729063 nw22f08.s1 NCI\_CGAP\_GCB0 Homo sapiens cDNA... 557 e-157  
AA987313, AA987313 or81h06.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 553 e-155  
AA300954, AA300954 EST13832 Testis tumor Homo sapiens cDNA 5'... 541 e-152  
AA425594, AA425594 zw48f03.r1 Soares total fetus Nb2HF8 9w Ho... 529 e-148  
N24014, N24014 yx87g10.s1 Homo sapiens cDNA clone 268770 3'. 523 e-146  
AA947355, AA947355 od86e12.s1 NCI\_CGAP\_Ov2 Homo sapiens cDNA ... 504 e-140  
AA121074, AA121074 zl88b06.s1 Stratagene colon (#937204) Homo... 460 e-127  
AA742964, AA742964 ny15d01.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 454 e-126  
AA306814, AA306814 EST177885 Colon carcinoma (HCC) cell line ... 452 e-125  
W87699, W87699 zh65b11.r1 Soares fetal liver spleen 1NFLS S1 ... 446 e-123  
W87700, W87700 zh65b11.s1 Soares fetal liver spleen 1NFLS S1 ... 438 e-121  
AA449084, AA449084 zx06b11.s1 Soares total fetus Nb2HF8 9w Ho... 398 e-109  
N99231, N99231 zb76f11.s1 Soares senescent fibroblasts NbHSF ... 391 e-106  
N49900, N49900 yv24d04.s1 Homo sapiens cDNA clone 243655 3'. 383 e-104  
AA782911, AA782911 ai62a10.s1 Soares testis NHT Homo sapiens ... 365 6e-99  
AA936553, AA936553 on23g11.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 361 9e-98  
N74414, N74414 za53c02.s1 Homo sapiens cDNA clone 296258 3'. 353 2e-95  
AA834628, AA834628 od98a10.s1 NCI\_CGAP\_Ov2 Homo sapiens cDNA ... 341 8e-92  
AA693756, AA693756 zi55f11.s1 Soares fetal liver spleen 1NFLS... 341 8e-92  
AA909616, AA909616 ol09d06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 341 8e-92  
H69662, H69662 yr92b03.s1 Homo sapiens cDNA clone 212717 3'. 321 8e-86  
AA249558, AA249558 jj7521.seq.F Human fetal heart, Lambda ZAP... 317 1e-84  
AA911960, AA911960 oh88g08.s1 NCI\_CGAP\_Co8 Homo sapiens cDNA ... 317 1e-84  
AA969099, AA969099 op55e06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 303 2e-80  
AA766191, AA766191 oa12g08.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 212 5e-53  
AA689312, AA689312 nx05e10.s1 NCI\_CGAP\_GC3 Homo sapiens cDNA ... 200 2e-49



AA418586, AA418586 zv93e05.r1 Soares NhHMPu S1 Homo sapiens c... 182 5e-44  
 AA418570, AA418570 zv93e05.s1 Soares NhHMPu S1 Homo sapiens c... 182 5e-44  
 AA534939, AA534939 nf82f03.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 167 3e-39  
 AA888430, AA888430 nw74e05.s1 NCI\_CGAP\_Pr12 Homo sapiens cDNA... 167 3e-39  
 N50003, N50003 yv24d04.r1 Homo sapiens cDNA clone 243655 5' s... 149 6e-34  
 AA535102, AA535102 nf84f06.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 135 1e-29  
 AA262335, AA262335 zr71g03.s1 Soares NhHMPu S1 Homo sapiens c... 129 6e-28  
 AA766681, AA766681 oa34c05.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 105 9e-21  
 AA761492, AA761492 nz27a05.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 101 1e-19  
 AA688350, AA688350 nv15a05.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 90 5e-16  
 AA347041, AA347041 EST53285 Fetal heart II Homo sapiens cDNA ... 76 8e-12  
 T94395, T94395 ye35e02.s1 Homo sapiens cDNA clone 119738 3'. 46 0.007  
 AA833565, AA833565 aj46a02.s1 Soares testis NHT Homo sapiens ... 46 0.007  
 AA095460, AA095460 l4630.seq.F Fetal heart, Lambda ZAP Expres... 40 0.43  
 AA904415, AA904415 ok07e06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 40 0.43  
 AI018800, AI018800 ov32h04.x1 Soares\_testis\_NHT Homo sapiens ... 38 1.7  
 AA631083, AA631083 nq77e07.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 1.7

AA399772, AA399772 vd70g05.r1 Beddington mouse embryonic regi... 347 5e-94  
 AA467106, AA467106 vd98b04.r1 Soares mouse NbMH Mus musculus ... 309 1e-82  
 AI046844, AI046844 uh55c11.r1 Soares mouse embryonic stem cel... 208 3e-52  
 AA475075, AA475075 vh11g05.r1 Soares mouse mammary gland NbMM... 194 4e-48  
 AA646094, AA646094 vs31e06.r1 Stratagene mouse Tcell 937311 M... 186 1e-45  
 AA390020, AA390020 vb30e07.r1 Soares mouse lymph node NbMLN M... 170 6e-41  
 AA245553, AA245553 my52g04.r1 Barstead mouse pooled organs MP... 170 6e-41  
 AA930741, AA930741 vs57b02.r1 Stratagene mouse skin (#937313)... 155 4e-36  
 W62610, W62610 md58c06.r1 Soares mouse embryo NbME13.5 14.5 M... 117 8e-25  
 AA239270, AA239270 my40e01.r1 Barstead mouse pooled organs MP... 109 2e-22  
 AA015148, AA015148 mh16e01.r1 Soares mouse placenta 4NbMP13.5... 54 1e-05  
 AA764095, AA764095 vw09h02.r1 Soares 2NbMT Mus musculus cDNA ... 38 0.61  
 AA238570, AA238570 my35h02.r1 Barstead mouse pooled organs MP... 38 0.61  
 AA600576, AA600576 vm75f08.r1 Knowles Solter mouse blastocyst... 38 0.61  
 AA636273, AA636273 vq76a10.s1 Knowles Solter mouse 2 cell Mus... 36 2.4  
 AA051407, AA051407 mj41f08.r1 Soares mouse embryo NbME13.5 14... 36 2.4  
 AA823136, AA823136 vw41b03.r1 Soares mouse mammary gland NbMM... 36 2.4  
 W83831, W83831 mf26a06.r1 Soares mouse embryo NbME13.5 14.5 M... 36 2.4  
 D77944, MUSC0D06 Mouse embryonal carcinoma F9 cell cDNA, C0D06 36 2.4  
 AA915408, AA915408 vz29h04.r1 Soares 2NbMT Mus musculus cDNA ... 36 2.4  
 AI047229, AI047229 uh63a09.r1 Soares mouse embryonic stem cel... 36 2.4  
 AA271880, AA271880 va73d01.r1 Soares mouse 3NME12 5 Mus muscu... 36 2.4  
 AA475165, AA475165 vg95f01.r1 Barstead mouse pooled organs MP... 36 2.4  
 AA619774, AA619774 vl58a05.s1 Knowles Solter mouse 2 cell Mus... 36 2.4

AA673116, AA673116 vn49g11.r1 Barstead mouse myotubes MPLRB5 ... 36 2.4  
 AA870623, AA870623 vq24a07.r1 Barstead stromal cell line MPLR... 36 2.4  
 W58907, W58907 md52f12.r1 Soares mouse embryo NbME13.5 14.5 M... 36 2.4  
 AA690593, AA690593 vu53d05.r1 Soares mouse mammary gland NbMM... 36 2.4  
 AA754801, AA754801 vu21f03.r1 Barstead mouse myotubes MPLRB5 ... 36 2.4  
 AA271607, AA271607 va72a12.r1 Soares mouse 3NME12 5 Mus muscu... 36 2.4  
 AA064256, AA064256 mj66a03.r1 Soares mouse p3NMF19.5 Mus musc... 36 2.4  
 AA475144, AA475144 vg95d01.r1 Barstead mouse pooled organs MP... 36 2.4  
 AA197736, AA197736 mv02g08.r1 GuayWoodford Beier mouse kidney... 36 2.4

AA817944, AA817944 UI-R-A0-ag-e-01-0-UI.s1 UI-R-A0 Rattus nor... 40 0.14  
 F14714, SSC8B01 S.scrofa mRNA; expressed sequence tag (5'; c... 38 0.54  
 H91505, H91505 SWMFA089SK Brugia malayi microfilaria cDNA (S... 36 2.1  
 AA998610, AA998610 UI-R-C0-if-c-04-0-UI.s1 UI-R-C0 Rattus nor... 36 2.1  
 AA893562, AA893562 EST197365 Normalized rat liver, Bento Soar... 36 2.1  
 AI008397, AI008397 EST202848 Normalized rat embryo, Bento Soa... 36 2.1

SEQ ID NO:554

Z92544, HS313D11 Human DNA sequence from cosmid 313D11 from ... 700 0.0  
 Z46940, HSPRMTNP2 H.sapiens PRM1 gene, PRM2 gene and TNP2 gene 44 0.048  
 U85039, TMU85039 Theileria mutans 32 kDa immunodominant pirop... 42 0.19  
 U85251, TMU85251 Theileria mutans 32 kDa immunodominant pirop... 42 0.19  
 AF003630, AF003630 Theileria mutans clone 15, 32 kDa immunodo... 42 0.19  
 AF003629, AF003629 Theileria mutans clone 9, 32 kDa immunodom... 42 0.19  
 AB007884, AB007884 Homo sapiens KIAA0424 mRNA, partial cds 42 0.19  
 U85040, TMU85040 Theileria mutans 32 kDa immunodominant pirop... 42 0.19  
 Z97343, ATFCA8 Arabidopsis thaliana DNA chromosome 4, ESSA I... 40 0.75  
 L19655, TOSRNA1X Tomato ringspot virus polypeptide (RNA-1) ge... 40 0.75  
 M73822, TOSRNA1A Tomato ringspot virus RNA1 gene, 5' end. 40 0.75  
 L02543, BOVMTNNT Bos taurus nicotinamide nucleotide transhydr... 40 0.75  
 J03534, BOVNAD Bovine mitochondrial nicotinamide nucleotide t... 40 0.75  
 M62862, TRBRTE Trypanosoma cruzi retrotransposon encoding gag... 40 0.75  
 X72711, MMREPCFC M.musculus mRNA for replication factor C, l... 38 3.0  
 M88489, MUSNBP Mus musculus nonamer binding protein mRNA, com... 38 3.0  
 U36441, MMU36441 Mus musculus differentiation specific elemen... 38 3.0  
 AB002354, AB002354 Human mRNA for KIAA0356 gene, complete cds 38 3.0  
 J03149, CATFMS Cat (F.domesticus) c-fms proto-oncogene mRNA ... 38 3.0  
 J05475, CHKVICOLL Chicken type VI collagen alpha 2 (VI) subun... 38 3.0

AF038163, AF038163 *Homo sapiens* interleukin-15 (IL-15) gene, ... 38 3.0  
 X75917, HSFBMBF *H.sapiens* mRNA for fetal beta-MHC binding fa... 38 3.0  
 X06542, DMHSPG3 *Drosophila* heat shock gene 3 from 67B locus 38 3.0  
 D17315, DRODAGK Fruit fly mRNA for diacylglycerol kinase, co... 38 3.0  
 Z58600, HS45E3F *H.sapiens* CpG DNA, clone 45e3, forward read ... 38 3.0  
 D78638, D78638 *Xenopus laevis* mRNA for DNA (cytosine-5-)-met... 38 3.0  
 Z49204, MMNADPTRH *M.musculus* mRNA for NADP transhydrogenase. 38 3.0  
 L10425, BPEMETC *Bordetella avium* beta-cystathionase-lyase (me... 38 3.0  
 U01222, U01222 *Mus musculus* activator 1 large subunit (A1-p14... 38 3.0  
 U15037, MMU15037 *Mus musculus* replication factor C large subu... 38 3.0  
 K01643, FCSSMONC Feline sarcoma virus (McDonough strain) tran... 38 3.0  
 Z57538, HS183C6F *H.sapiens* CpG DNA, clone 183c6, forward rea... 38 3.0  
 U07157, MMU07157 *Mus musculus* ISRE-binding protein (IBF-1) mR... 38 3.0  
 Z64961, HS183F7R *H.sapiens* CpG DNA, clone 183f7, reverse rea... 38 3.0

## HUMAN ESTs

## SEQ ID NO:555

AF039693, AF039693 *Homo sapiens* unknown protein mRNA, complet... 916 0.0  
 S51239, S51239 calreticulin [*Aplysia californica*=marine snail... 48 0.005  
 Z74035, CEF47G9 *Caenorhabditis elegans* cosmid F47G9, complet... 46 0.019  
 AF022814, AF022814 *Fugu rubripes* transcription factor (SLP-1)... 44 0.073  
 X82638, CSCYTOX *C.sordelii* cytotoxin gene 42 0.29  
 U63063, SCU63063 *Saccharomyces cerevisiae* something about sil... 42 0.29  
 X63501, SCRPC53 *S.cerevisiae* RPC53 gene for RNA polymerase C... 42 0.29  
 U67572, U67572 *Methanococcus jannaschii* section 114 of 150 of... 42 0.29  
 Z74201, SCYDL153C *S.cerevisiae* chromosome IV reading frame O... 42 0.29  
 U66032, MTU66032 *Methanosarcina thermophila* CO dehydrogenase/... 42 0.29  
 Z95620, SPBC3D6 *S.pombe* chromosome II cosmid c3D6 42 0.29  
 X97751, SCIV23 *S.cerevisiae* chrIV genes STE7, CLB3, MSH5, RP... 42 0.29  
 X65541, ATCAN *A.thaliana* mRNA for carbonic anhydrase 42 0.29  
 L14750, ATHCARANHY *Arabidopsis thaliana* carbonic anhydrase ge... 42 0.29  
 U00995, U00995 *Rattus norvegicus* TA1 mRNA, complete cds. 40 1.1  
 S73876, S73876 FPR3=FKBP-70 [*Saccharomyces cerevisiae*, Genomi... 40 1.1  
 U12825, SCU12825 *Saccharomyces cerevisiae* transcription facto... 40 1.1  
 Z74237, SCYDL189W *S.cerevisiae* chromosome IV reading frame O... 40 1.1  
 U76906, REU76906 *Rhizobium etli* FixK (fixK), FixN (fixN), mon... 40 1.1

- AF050157, MMHC135G15 *Mus musculus* major histocompatibility lo... 40 1.1
- X58857, SCPPH22 *S.cerevisiae* PPH22 gene for protein phosphat... 40 1.1
- X79379, SCPROIS *S.cerevisiae* gene for proline isomerase 40 1.1
- Z68341, CEF01G4 *Caenorhabditis elegans* cosmid F01G4, complet... 40 1.1
- M17192, MUSHOX1 Mouse homeodomain protein (Hox1.1) mRNA, comp... 40 1.1
- U50307, CELF43H9 *Caenorhabditis elegans* cosmid F43H9. 40 1.1
- S73144, S73144 bone sialoprotein [cattle, fetal bone cells, m... 40 1.1
- L34569, YSCFPR3A *Saccharomyces cerevisiae* (clone pBYNG1) prol... 40 1.1
- D78303, D78303 *Rattus norvegicus* YT521 mRNA for RNA splicing... 40 1.1
- X83276, SCDNAIV *S.cerevisiae* DNA for ORFs from chromosome IV 40 1.1
- U54558, HSU54558 Human translation initiation factor eIF3 p66... 40 1.1
- Z50109, CEC09H10 *Caenorhabditis elegans* cosmid C09H10, compl... 40 1.1
- X56983, EAVATP1 *E.arvense* gene for catalytic 70kDa V-ATPase ... 40 1.1
- AB011125, AB011125 *Homo sapiens* mRNA for KIAA0553 protein, p... 40 1.1
- Z46373, SC8248 *S.cerevisiae* chromosome XIII cosmid 8248 40 1.1
- AF039042, CELZK697 *Caenorhabditis elegans* cosmid ZK697 40 1.1
- Z28028, SCYKL028W *S.cerevisiae* chromosome XI reading frame O... 40 1.1
- AC005266, AC005266 *Homo sapiens* chromosome 19, cosmid F23465,... 38 4.5
- U60822, HSU60822 Human dystrophin (DMD) gene, exons 7, 8 and ... 38 4.5
- AJ003141, HVAJ3141 *Hordeum vulgare* mRNA for stress-related p... 38 4.5
- M26250, CRAGAP43 Goldfish (*C.auratus*) growth-associated prote... 38 4.5
- X95267, GGRYR3 *G.gallus* mRNA for ryanodine receptor type 3 38 4.5
- L37092, MUSCDPK *Mus musculus* cyclin-dependent kinase homologu... 38 4.5
- Z72507, CEF17C11 *Caenorhabditis elegans* cosmid F17C11, compl... 38 4.5
- U29608, DMU29608 *Drosophila melanogaster* large tumor suppress... 38 4.5
- Z49072, CET24A11 *Caenorhabditis elegans* cosmid T24A11, compl... 38 4.5
- M83142, RATBGASTR *Rattus norvegicus* beta-galactoside-alpha 2.... 38 4.5
- Z20656, HSCAMHCA *Homo sapiens* of cardiac alpha-myosin heavy ... 38 4.5
- M82937, YSACS2A *Candida albicans* chitin synthase 2 (CHS2) gen... 38 4.5
- U28888, MMU28888 *Mus musculus* neurogenic differentiation fact... 38 4.5
- S66408, S66408 c-erbB=proto-oncogene {exon 1, promoter} [chic... 38 4.5
- AC002396, AC002396 *Arabidopsis thaliana* chromosome I BAC F316... 38 4.5
- AE000665, MMAE000665 *Mus musculus* TCR beta locus from bases 5... 38 4.5
- L39837, DROWARTS *Drosophila melanogaster* tumor supressor (war... 38 4.5
- AG000377, AG000377 *Homo sapiens* genomic DNA, 21q region, clo... 38 4.5
- X05632, HSMHCAG1 Human alpha-MHC gene for myosin heavy chain... 38 4.5
- AC002108, AC002108 Genomic sequence from Mouse 4, complete se... 38 4.5
- U37219, HSU37219 Human cyclophilin-like protein CyP-60 mRNA, ... 38 4.5
- M58633, MUSP58GTA Mouse p58/GTA protein kinase mRNA, complete... 38 4.5
- M25162, HUMMYHC08 Human cardiac alpha-myosin heavy chain (MYH... 38 4.5
- Z46259, SCRPD3COS *S.cerevisiae* FY1676 RPD3 gene. 38 4.5
- U09558, LJU09558 *Lactobacillus johnsonii* ATCC 11506 insertion... 38 4.5
- U66160, MMUSC104 *Mus musculus* extracellular matrix associated... 38 4.5
- Z73126, SCYLL021W *S.cerevisiae* chromosome XII reading frame ... 38 4.5
- U83981, HSU83981 *Homo sapiens* apoptosis associated protein (G... 38 4.5

U59897, MRU59897 *Macropus robustus* hypoxanthine phosphoribosy... 38 4.5  
 D38256, YSCSCT1 Yeast gene for suppressor of ctr mutation 38 4.5  
 X69838, HSG9A *H.sapiens* mRNA for G9a 38 4.5  
 X52952, RNCMOSO Rat mRNA for c-mos 38 4.5  
 U37221, HSU37221 Human cyclophilin-like protein mRNA, partial... 38 4.5  
 X65880, DPRH4OP1 *D.pseudoobscura* rh4 opsin gene, exon 1 38 4.5  
 U58971, NTU58971 *Nicotiana tabacum* calmodulin-binding protein... 38 4.5  
 Z35773, SCYBL012C *S.cerevisiae* chromosome II reading frame O... 38 4.5  
 X67668, MMHMG2 *M.musculus* mRNA for high mobility group 2 pro... 38 4.5  
 L81727, HSL81727 *Homo sapiens* (subclone 1\_d5 from P1 H69) DNA... 38 4.5  
 AL023800, HS833B2 Human DNA sequence \*\*\* SEQUENCING IN PROGR... 38 4.5  
 X62438, HVPERO *H.vulgare* mRNA for peroxidase 38 4.5  
 AC004096, AC004096 Mouse Cosmid ma66a100 from 14D1-D2, comple... 38 4.5  
 AL008980, PFSC03050 *Plasmodium falciparum* DNA \*\*\* SEQUENCING... 38 4.5  
 U64827, MMU64827 *Mus musculus* extracellular matrix associated... 38 4.5  
 AC003010, HUAC003010 *Homo sapiens* Chromosome 16 BAC clone CIT... 38 4.5  
 AE001002, AE001002 *Archaeoglobus fulgidus* section 105 of 172 ... 38 4.5  
 U86662, LEU86662 *Lycopersicon esculentum* VPS41 (tVPS41) mRNA,... 38 4.5  
 M20386, CHKEGFR Chicken epidermal growth factor receptor (CER... 38 4.5  
 M77637, CHKEGF *Gallus gallus* EGF/TGF-alpha receptor (c-erbB) ... 38 4.5  
 U08185, MMU08185 *Mus musculus* BALB/c zinc-finger protein Blim... 38 4.5  
 AC004231, AC004231 *Homo sapiens* chromosome 17, clone hRPC.111... 38 4.5  
 Z50100, HVC39SAT *H.vulgare* GAA-satellite DNA 38 4.5  
 X53731, SCSA2G *S. cerevisiae* SPA2 gene 38 4.5  
 U37220, HSU37220 Human cyclophilin-like protein mRNA, partial... 38 4.5  
 X97560, SC32KBF *S.cerevisiae* 32kb DNA fragment of chromosome... 38 4.5  
 AB011479, AB011479 *Arabidopsis thaliana* genomic DNA, chromos... 38 4.5  
 U89340, LVU89340 *Lytechinus variegatus* Endo16 homolog (LvEndo1... 38 4.5  
 U73850, TCU73850 *Trypanosoma cruzi* 29 kDa proteasome subunit ... 38 4.5  
 AB006698, AB006698 *Arabidopsis thaliana* genomic DNA, chromos... 38 4.5  
 D37888, CYIMYC2 *Cyprinus carpio* c-myc gene for c-Myc, comple... 38 4.5  
 AF017349, MMDSGIII 7 *Mus musculus* desmoglein 3 (Dsg3) gene, i... 38 4.5  
 X91807, OSTA136 *O.sativa* mRNA for alpha-tubulin (clone OSTA-... 38 4.5  
 Z71587, SCYNL311C *S.cerevisiae* chromosome XIV reading frame ... 38 4.5  
 AE000742, AE000742 *Aquifex aeolicus* section 74 of 109 of the ... 38 4.5

#### HUMAN ESTs

AA324311, AA324311 EST27136 Cerebellum II *Homo sapiens* cDNA 5... 593 e-167  
 AA639190, AA639190 ns04a01.r1 NCI\_CGAP\_Ew1 *Homo sapiens* cDNA ... 513 e-143  
 AA172199, AA172199 zo96a06.r1 Stratagene ovarian cancer (#937... 505 e-141  
 AA588066, AA588066 nk10d08.s1 NCI\_CGAP\_Co2 *Homo sapiens* cDNA ... 502 e-140  
 AA412036, AA412036 zt68d09.s1 Soares testis NHT *Homo sapiens* ... 502 e-140  
 AA508745, AA508745 ni23a03.s1 NCI\_CGAP\_Co4 *Homo sapiens* cDNA ... 502 e-140

AA480337, AA480337 ne33a03.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 502 e-140  
 AA902270, AA902270 ok69e04.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 502 e-140  
 AA947303, AA947303 ok20d04.s1 Soares\_NSF\_F8\_9W\_OT\_PA\_P\_S1 Hom... 502 e-140  
 R23642, R23642 yh35e03.r1 Homo sapiens cDNA clone 131740 5' ... 490 e-136  
 AA811913, AA811913 ob51d06.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 464 e-128  
 AA172083, AA172083 zo96a06.s1 Stratagene ovarian cancer (#937... 464 e-128  
 AA725458, AA725458 ai16g01.s1 Soares parathyroid tumor NbHPA ... 400 e-109  
 R26558, R26558 yh35e02.s1 Homo sapiens cDNA clone 131738 3' ... 359 5e-97  
 AA402403, AA402403 zt68d09.r1 Soares testis NHT Homo sapiens ... 315 6e-84  
 R58372, R58372 G3243 Fetal heart Homo sapiens cDNA clone G324... 262 8e-68  
 AA389703, AA389703 M421 Fetal heart, Lambda ZAP Express Homo ... 202 6e-50  
 W25749, W25749 11b4 Human retina cDNA randomly primed sublibr... 103 4e-20  
 W27158, W27158 22h9 Human retina cDNA randomly primed sublibr... 66 1e-08  
 T65784, T65784 yc11f10.s1 Homo sapiens cDNA clone 80395 3' si... 42 0.14  
 AA179601, AA179601 zp49f10.r1 Stratagene HeLa cell s3 937216 ... 42 0.14  
 AA928679, AA928679 on48e08.s1 NCI\_CGAP\_Co8 Homo sapiens cDNA ... 40 0.55  
 AA887972, AA887972 nq95g11.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 40 0.55  
 W46946, W46946 zc40c05.s1 Soares senescent fibroblasts NbHSF ... 40 0.55  
 AA887862, AA887862 nq99b08.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 40 0.55  
 AA554819, AA554819 ni34d08.s1 NCI\_CGAP\_Lu1 Homo sapiens cDNA ... 40 0.55  
 AA557362, AA557362 nl81d12.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.55  
 AA252258, AA252258 zr29e04.s1 Stratagene NT2 neuronal precurs... 40 0.55  
 N34310, N34310 yy52b10.s1 Homo sapiens cDNA clone 277147 3' s... 40 0.55  
 AA552228, AA552228 nk06b04.s1 NCI\_CGAP\_Co2 Homo sapiens cDNA ... 40 0.55  
 AI017648, AI017648 ou99b02.x1 NCI\_CGAP\_Kid3 Homo sapiens cDNA... 40 0.55  
 T17395, T17395 NIB846 Normalized infant brain, Bento Soares H... 40 0.55  
 AA219659, AA219659 zr05e10.s1 Stratagene NT2 neuronal precurs... 40 0.55  
 AA463841, AA463841 zx67f06.r1 Soares total fetus Nb2HF8 9w Ho... 40 0.55  
 N66817, N66817 za09b11.s1 Homo sapiens cDNA clone 292029 3' s... 40 0.55  
 AA167358, AA167358 zp06f12.s1 Stratagene ovarian cancer (#937... 40 0.55  
 AA063505, AA063505 zf70d02.r1 Soares pineal gland N3HPG Homo ... 40 0.55  
 AA731625, AA731625 nw64a04.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.55  
 AA100119, AA100119 zl80g04.s1 Stratagene colon (#937204) Homo... 40 0.55  
 AA181572, AA181572 zp51d04.s1 Stratagene HeLa cell s3 937216 ... 40 0.55  
 AA327182, AA327182 EST30459 Colon I Homo sapiens cDNA 5' end ... 40 0.55  
 R48608, R48608 yj65f07.s1 Homo sapiens cDNA clone 153637 3' s... 40 0.55  
 AA678485, AA678485 ah06e04.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
 AA082353, AA082353 zn38c11.r1 Stratagene endothelial cell 937... 40 0.55  
 AA633213, AA633213 nq57c06.s1 NCI\_CGAP\_Co9 Homo sapiens cDNA ... 40 0.55  
 W38410, W38410 zc77g09.s1 Pancreatic Islet Homo sapiens cDNA ... 40 0.55  
 AA345893, AA345893 EST51967 Gall bladder I Homo sapiens cDNA ... 40 0.55  
 N26876, N26876 yx97f06.s1 Homo sapiens cDNA clone 269699 3' s... 40 0.55  
 N95279, N95279 zb60c09.s1 Soares fetal lung NbHL19W Homo sapi... 40 0.55  
 AI041637, AI041637 ox92h08.x1 Soares\_senescent\_fibroblasts\_Nb... 40 0.55  
 N67830, N67830 za05d12.s1 Homo sapiens cDNA clone 291671 3' s... 40 0.55

AA535094, AA535094 nf84e06.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.55  
AA514414, AA514414 nf57d11.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.55  
T56802, T56802 ya71h07.s2 Homo sapiens cDNA clone 67165 3' co... 40 0.55  
N68147, N68147 yz55f12.s1 Homo sapiens cDNA clone 286991 3' s... 40 0.55  
AA535811, AA535811 nf93g10.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.55  
AA115591, AA115591 zl05g09.s1 Soares pregnant uterus NbHPU Ho... 40 0.55  
N75851, N75851 za96g11.s1 Homo sapiens cDNA clone 300452 3'. 40 0.55  
AA534433, AA534433 nf80a08.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.55  
H99778, H99778 yx36g01.s1 Homo sapiens cDNA clone 263856 3' s... 40 0.55  
AA970859, AA970859 oo81h03.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 40 0.55  
F02131, HSC0PF092 H. sapiens partial cDNA sequence; clone c-... 40 0.55  
AA810279, AA810279 od14g11.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.55  
AA595146, AA595146 nl84b01.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.55  
AA632386, AA632386 np67e06.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.55  
AA135124, AA135124 zo24c04.s1 Stratagene colon (#937204) Homo... 40 0.55  
AA143500, AA143500 zo31b10.s1 Stratagene colon (#937204) Homo... 40 0.55  
AA854992, AA854992 aj53g12.s1 Soares testis NHT Homo sapiens ... 40 0.55  
AA156872, AA156872 zl20h07.s1 Soares pregnant uterus NbHPU Ho... 40 0.55  
AA160994, AA160994 zq41c12.s1 Stratagene hNT neuron (#937233)... 40 0.55  
AA961724, AA961724 or60a10.s1 NCI\_CGAP\_GC3 Homo sapiens cDNA ... 40 0.55  
AA551210, AA551210 nj27e09.s1 NCI\_CGAP\_AA1 Homo sapiens cDNA ... 40 0.55  
R44103, R44103 yg27c10.s1 Homo sapiens cDNA clone 33636 3'. 40 0.55  
AA938086, AA938086 oj08h08.s1 NCI\_CGAP\_Mel3 Homo sapiens cDNA... 40 0.55  
AA576021, AA576021 nm57d11.s1 NCI\_CGAP\_Br3 Homo sapiens cDNA ... 40 0.55  
AA722725, AA722725 zg86b09.s1 Soares fetal heart NbHH19W Homo... 40 0.55  
AA678948, AA678948 ah08h11.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
W07435, W07435 za96g11.r1 Soares fetal lung NbHL19W Homo sapi... 40 0.55  
T34639, T34639 EST72167 Homo sapiens cDNA 5' end similar to s... 40 0.55  
AA632245, AA632245 np67b09.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 40 0.55  
R98701, R98701 yr31f08.s1 Homo sapiens cDNA clone 206919 3'. 40 0.55  
R76418, R76418 yi58a10.s1 Homo sapiens cDNA clone 143418 3'. 40 0.55  
AI028447, AI028447 ow08b09.x1 Soares\_parathyroid\_tumor\_NbHPA ... 40 0.55  
AI002929, AI002929 an15e12.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
AA779388, AA779388 ae26a03.s1 Soares NbHFB Homo sapiens cDNA ... 40 0.55  
AA776220, AA776220 ah10f02.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
AA815223, AA815223 oc05c04.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.55  
W60807, W60807 zd27b08.s1 Soares fetal heart NbHH19W Homo sap... 40 0.55  
AA666007, AA666007 ag71g01.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
AA643849, AA643849 np26f07.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 40 0.55  
AA846740, AA846740 aj99b12.s1 Soares parathyroid tumor NbHPA ... 40 0.55  
AA598498, AA598498 ae38h01.s1 Gessler Wilms tumor Homo sapien... 40 0.55  
AA535972, AA535972 nf95a01.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 40 0.55  
AA488544, AA488544 ab37g06.r1 Stratagene HeLa cell s3 937216 ... 40 0.55  
AA866044, AA866044 oh52g07.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 40 0.55  
C14370, C14370 Human fetal brain cDNA 5'-end GEN-050F01 40 0.55

AA237204, AA237204 mx18d02.r1 Soares mouse NML Mus musculus c... 167 1e-39  
 AA563402, AA563402 vl75d08.r1 Knowles Solter mouse blastocyst... 38 0.78  
 AA413261, AA413261 ve52f04.r1 Beddington mouse embryonic regi... 38 0.78  
 AA097645, AA097645 mm36f09.r1 Stratagene mouse skin (#937313)... 38 0.78  
 AA122578, AA122578 mn25b08.r1 Beddington mouse embryonic regi... 38 0.78  
 AA122581, AA122581 mn25c08.r1 Beddington mouse embryonic regi... 38 0.78  
 AA646168, AA646168 vn11e06.r1 Stratagene mouse Tcell 937311 M... 36 3.1  
 AA200881, AA200881 mu03c09.r1 Soares mouse 3NbMS Mus musculus... 36 3.1  
 AI048938, AI048938 uc84h06.y1 Sugano mouse kidney mkia Mus mu... 36 3.1  
 AA217675, AA217675 mv01b09.r1 Soares mouse lymph node NbMLN M... 36 3.1  
 AI006387, AI006387 ua71d09.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.1  
 AA162722, AA162722 mn42b07.r1 Beddington mouse embryonic regi... 36 3.1  
 AA207387, AA207387 mv89a11.r1 GuayWoodford Beier mouse kidney... 36 3.1  
 AA511382, AA511382 vg14b04.r1 Soares mouse NbMH Mus musculus ... 36 3.1  
 AA123112, AA123112 mn30g01.r1 Beddington mouse embryonic regi... 36 3.1  
 AA106683, AA106683 ml83h06.r1 Stratagene mouse kidney (#93731... 36 3.1  
 AA105882, AA105882 ml84h07.r1 Stratagene mouse kidney (#93731... 36 3.1  
 W12171, W12171 ma59a10.r1 Soares mouse p3NMF19.5 Mus musculus... 36 3.1  
 AA208446, AA208446 mv85e01.r1 GuayWoodford Beier mouse kidney... 36 3.1  
 AA451370, AA451370 vf84h02.r1 Soares mouse mammary gland NbMM... 36 3.1  
 AA244639, AA244639 mx02g12.r1 Soares mouse NML Mus musculus c... 36 3.1  
 AA267119, AA267119 mz74d07.r1 Soares mouse lymph node NbMLN M... 36 3.1  
 AA561847, AA561847 vl27a12.r1 Stratagene mouse Tcell 937311 M... 36 3.1  
 AA237313, AA237313 mx17b11.r1 Soares mouse NML Mus musculus c... 36 3.1  
 AA145817, AA145817 mq68a12.r1 Soares 2NbMT Mus musculus cDNA ... 36 3.1  
 AA052080, AA052080 mf69f12.r1 Soares mouse embryo NbME13.5 14... 36 3.1  
 AA000646, AA000646 mg23f09.r1 Soares mouse embryo NbME13.5 14... 36 3.1  
 AA510521, AA510521 vh59a05.r1 Soares mouse mammary gland NbMM... 36 3.1  
 AI006122, AI006122 ua86h01.r1 Soares mouse mammary gland NbMM... 36 3.1  
 AA987039, AA987039 uc74e05.x1 Sugano mouse liver mlia Mus mus... 36 3.1  
 W77413, W77413 me64d06.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.1  
 AA114809, AA114809 mn17e09.r1 Beddington mouse embryonic regi... 36 3.1  
 AA793564, AA793564 vn54c05.r1 Barstead mouse myotubes MPLRB5 ... 36 3.1  
 AA174537, AA174537 mt10f09.r1 Soares mouse 3NbMS Mus musculus... 36 3.1  
 W62181, W62181 md87d08.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.1  
 AA272905, AA272905 va39d01.r1 Soares mouse 3NME12 5 Mus muscu... 36 3.1  
 AA286005, AA286005 va30e05.r1 GuayWoodford Beier mouse kidney... 36 3.1  
 AA212823, AA212823 mw81c07.r1 Soares mouse NML Mus musculus c... 36 3.1  
 AA125061, AA125061 mq83d10.r1 Stratagene mouse melanoma (#937... 36 3.1

AA519228, AA519228 TgESTzz39h02.s1 TgME49 invivo Bradyzoite c... 44 0.011



AA520185, AA520185 TgESTzz39d03.s1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA531917, AA531917 TgESTzz48f01.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA519997, AA519997 TgESTzz36h03.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA520811, AA520811 TgESTzz64d05.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA520866, AA520866 TgESTzz68e05.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA519844, AA519844 TgESTzz36c03.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA274295, AA274295 TgESTzz24c11.s1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA520901, AA520901 TgESTzz65a05.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA519829, AA519829 TgESTzz36a02.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 AA531839, AA531839 TgESTzz47h05.r1 TgME49 invivo Bradyzoite c... 44 0.011  
 C70525, C70525 C.elegans cDNA clone yk409g6 : 5' end, single... 44 0.011  
 AA520235, AA520235 TgESTzz53c06.r1 TgME49 invivo Bradyzoite c... 42 0.044  
 T42800, T42800 6063 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 42 0.044  
 R29976, R29976 12581 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 42 0.044  
 H32045, H32045 EST106774 Rat PC-12 cells, untreated Rattus sp... 40 0.18  
 AA819924, AA819924 MF5MA171.AE3 S. mansonii female adult Lambd... 40 0.18  
 H37128, H37128 15257 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 40 0.18  
 T04367, T04367 414 Lambda-PRL2 Arabidopsis thaliana cDNA clon... 40 0.18  
 R90528, R90528 16883 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 40 0.18  
 AA660422, AA660422 00298 MtrHE Medicago truncatula cDNA 5' 40 0.18  
 U94861, RRU94861 Rattus norvegicus clone HCY3 mRNA sequence 40 0.18  
 F14275, ATTS5197 A. thaliana transcribed sequence; clone YBY... 38 0.69  
 W43730, W43730 23107 CD4-16 Arabidopsis thaliana cDNA clone H... 38 0.69  
 N65025, N65025 20065 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 38 0.69  
 AI001628, AI001628 EST0210 Tilapia brain cDNA library in pUC1... 38 0.69  
 H74687, H74687 383 Brassica napus cDNA clone R25R. 38 0.69  
 AA395597, AA395597 27394 Lambda-PRL2 Arabidopsis thaliana cDN... 38 0.69  
 AA753070, AA753070 97AS2091 Rice Immature Seed Lambda ZAPII c... 38 0.69  
 D41274, RICS3647A Rice cDNA, partial sequence (S3647\_1A). 38 0.69  
 Z25731, ATTS1208 A. thaliana transcribed sequence; clone VCV... 38 0.69  
 N82780, N82780 TgESTzy34e03.r1 TgRH Tachyzoite cDNA Toxoplasm... 38 0.69  
 AA597822, AA597822 29889 Lambda-PRL2 Arabidopsis thaliana cDN... 38 0.69  
 AA948906, AA948906 LD27590.5prime LD Drosophila melanogaster ... 38 0.69  
 AI013695, AI013695 EST208370 Normalized rat spleen, Bento Soa... 38 0.69  
 AA753263, AA753263 96BS0294 Rice Immature Seed Lambda ZAPII c... 38 0.69  
 F14402, ATTS5324 A. thaliana transcribed sequence; clone TAP... 36 2.7  
 T46158, T46158 9421 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 2.7  
 C91400, C91400 Dictyostelium discoideum slug cDNA, clone SSK169 36 2.7  
 T46009, T46009 9272 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 2.7  
 AA440655, AA440655 LD15510.5prime LD Drosophila melanogaster ... 36 2.7  
 AA559374, AA559374 MU002092.NH3 York-Harrop-lung-A Schistosom... 36 2.7  
 Z32623, ATTS2751 A. thaliana transcribed sequence; clone YAP... 36 2.7  
 T43683, T43683 6946 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 2.7  
 AA263535, AA263535 LD06645.5prime LD Drosophila melanogaster ... 36 2.7  
 C37095, C37095 C.elegans cDNA clone yk482c11 : 3' end, singl... 36 2.7

C57017, C57017 *C.elegans* cDNA clone yk308h9 : 3' end, single... 36 2.7  
 C93857, C93857 *Dictyostelium discoideum* slug cDNA, clone SSL794 36 2.7  
 C92242, C92242 *Dictyostelium discoideum* slug cDNA, clone SSD283 36 2.7  
 Z33976, ATTS3037 *A. thaliana* transcribed sequence; clone YAP... 36 2.7  
 R62091, R62091 EST351 *Strongylocentrotus purpuratus* cDNA 5' end. 36 2.7  
 AA567455, AA567455 HL01288.5prime HL *Drosophila melanogaster* ... 36 2.7  
 C74456, C74456 Rice cDNA, partial sequence (E31357\_1A) 36 2.7  
 AA753227, AA753227 97AS2316 Rice Immature Seed Lambda ZAPII c... 36 2.7  
 C92456, C92456 *Dictyostelium discoideum* slug cDNA, clone SSE569 36 2.7  
 T20458, T20458 2466 Lambda-PRL2 *Arabidopsis thaliana* cDNA clo... 36 2.7  
 R29905, R29905 12510 Lambda-PRL2 *Arabidopsis thaliana* cDNA cl... 36 2.7  
 M79841, M79841 wEST00378 *Caenorhabditis elegans* cDNA clone CE... 36 2.7  
 Z17562, ATTS0136 *A. thaliana* transcribed sequence; clone TAT... 36 2.7  
 D71983, CELK084H2R *C.elegans* cDNA clone yk84h2 : 3' end, sin... 36 2.7  
 T20404, T20404 2412 Lambda-PRL2 *Arabidopsis thaliana* cDNA clo... 36 2.7  
 AI012789, AI012789 EST207240 Normalized rat placenta, Bento S... 36 2.7  
 U83048, BTU83048 *Bos taurus* clone 0429 mRNA sequence 36 2.7  
 AA660182, AA660182 00022 MtrHE *Medicago truncatula* cDNA 5' si... 36 2.7  
 D48514, RICS14740A Rice cDNA, partial sequence (S14740\_1A). 36 2.7  
 C90110, C90110 *Dictyostelium discoideum* slug cDNA, clone SSI103 36 2.7  
 H36880, H36880 15009 Lambda-PRL2 *Arabidopsis thaliana* cDNA cl... 36 2.7  
 AA699152, AA699152 HL07807.5prime HL *Drosophila melanogaster* ... 36 2.7  
 C11922, C11922 *C.elegans* cDNA clone yk144a11 : 5' end, singl... 36 2.7  
 AA816691, AA816691 LD03795.5prime LD *Drosophila melanogaster* ... 36 2.7

SEQ ID NO:556

X99668, MM22A3 *M.musculus* mRNA for exon from unknown gene 22A3 260 5e-67  
 Z83760, CICOS41 *Ciona intestinalis* DNA sequence from cosmid ... 40 0.94  
 Z75710, CED1081 *Caenorhabditis elegans* cosmid D1081, complet... 40 0.94  
 U73628, HSU73628 Human chromosome 11 101h11 cosmid, complete ... 40 0.94  
 X99757, DMDYDTRO *D.melanogaster* mRNA for dystrophin 38 3.7  
 U51189, HIVU51189 HIV-1 clone 93th253 from Thailand, complete... 38 3.7  
 AC004118, AC004118 *Drosophila melanogaster* (P1 DS06238 (D26))... 38 3.7  
 U50313, CELF44C4 *Caenorhabditis elegans* cosmid F44C4. 38 3.7  
 AC004503, AC004503 *Homo sapiens* chromosome 5, P1 clone 1354A7... 38 3.7  
 M16840, WHTCPA2 Wheat Asp-tRNA gene. 38 3.7  
 Y13381, RNAMPH1 *Rattus norvegicus* mRNA for amphiphysin, amph1 38 3.7  
 AC002994, AC002994 *Homo sapiens* chromosome 17, clone HRPC987K... 38 3.7  
 AB008271, AB008271 *Arabidopsis thaliana* genomic DNA. chromos... 38 3.7  
 D49701, ASNNIAD *Aspergillus oryzae* niaD gene for nitrate red... 38 3.7

X59422, HSPLD1 H.sapiens Pl d1 repetitive DNA 38 3.7  
 Z98555, PFSC03027 Plasmodium falciparum DNA \*\*\* SEQUENCING I... 38 3.7

## HUMAN ESTs

AA315671, AA315671 EST187451 Colon carcinoma (HCC) cell line ... 932 0.0  
 U56653, HSU56653 Human heat shock inducible mRNA 769 0.0  
 AA487685, AA487685 ab23b09.r1 Stratagene lung (#937210) Homo ... 751 0.0  
 AA044797, AA044797 zk67g12.r1 Soares pregnant uterus NbHPU Ho... 749 0.0  
 AA314922, AA314922 EST186735 HCC cell line (matastasis to liv... 698 0.0  
 AA082278, AA082278 zn42d12.r1 Stratagene endothelial cell 937... 668 0.0  
 H22613, H22613 yn64f03.r1 Homo sapiens cDNA clone 173213 5'. 624 e-177  
 AA044743, AA044743 zk67g12.s1 Soares pregnant uterus NbHPU Ho... 622 e-176  
 AA487470, AA487470 ab23b09.s1 Stratagene lung (#937210) Homo ... 601 e-170  
 AA121057, AA121057 zm22b03.r1 Stratagene pancreas (#937208) H... 581 e-164  
 AA194396, AA194396 zq05g05.s1 Stratagene muscle 937209 Homo s... 535 e-150  
 AA384283, AA384283 EST97787 Thyroid Homo sapiens cDNA 5' end 535 e-150  
 AA669015, AA669015 ab88f01.s1 Stratagene lung (#937210) Homo ... 535 e-150  
 AA194336, AA194336 zq05g05.r1 Stratagene muscle 937209 Homo s... 505 e-141  
 R96173, R96173 yt84e09.r1 Homo sapiens cDNA clone 231016 5'. 486 e-135  
 AA028934, AA028934 zk08b09.s1 Soares pregnant uterus NbHPU Ho... 484 e-134  
 AA564849, AA564849 nj22c04.s1 NCI\_CGAP\_AA1 Homo sapiens cDNA ... 442 e-122  
 AA932576, AA932576 oo57g10.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 440 e-121  
 AA876265, AA876265 oi12g09.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 434 e-120  
 AA025525, AA025525 ze86a11.s1 Soares fetal heart NbHH19W Homo... 430 e-118  
 U56654, HSU56654 Human heat shock inducible mRNA 426 e-117  
 AA746600, AA746600 nx18c02.s1 NCI\_CGAP\_GC3 Homo sapiens cDNA ... 406 e-111  
 AA876346, AA876346 oj24a11.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 406 e-111  
 W23082, W23082 78D1 Human retina cDNA Tsp509I-cleaved sublibr... 402 e-110  
 AI034059, AI034059 ow14h11.x1 Soares\_parathyroid\_tumor\_NbHPA ... 357 2e-96  
 AA662934, AA662934 nu92d09.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 323 2e-86  
 AA844331, AA844331 ai95f01.s1 Soares parathyroid tumor NbHPA ... 301 8e-80  
 AA249866, AA249866 y0761.seq.F Human fetal heart, Lambda ZAP ... 297 1e-78  
 R19215, R19215 yg24b07.r1 Homo sapiens cDNA clone 33126 5'. 280 3e-73  
 T39355, T39355 ya04g08.r1 Homo sapiens cDNA clone 60542 5'. 254 2e-65  
 AA731264, AA731264 nw57c08.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 220 2e-55  
 AA768549, AA768549 oa67c07.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 220 2e-55  
 AA668506, AA668506 ac49a11.s1 Stratagene hNT neuron (#937233)... 216 4e-54  
 T55337, T55337 yb79b05.s1 Homo sapiens cDNA clone 77361 3'. 198 8e-49  
 AA860575, AA860575 aj86a09.s1 Soares parathyroid tumor NbHPA ... 198 8e-49  
 AA335548, AA335548 EST39962 Epididymus Homo sapiens cDNA 5' end 109 6e-22  
 R13183, R13183 yf73f02.r1 Homo sapiens cDNA clone 27960 5'. 58 2e-06  
 T80034, T80034 yd04c06.r1 Homo sapiens cDNA clone 24672 5'. 38 1.8  
 AA595230, AA595230 nl84g02.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 38 1.8

AA871935, AA871935 vq42h02.r1 Barstead bowel MPLRB9 Mus muscu... 664 0.0  
 AA062330, AA062330 ml35e10.r1 Stratagene mouse testis (#93730... 589 e-167  
 AI048164, AI048164 ud71b09.y1 Sugano mouse liver mlia Mus mus... 537 e-151  
 W08037, W08037 mb37h01.r1 Soares mouse p3NMF19.5 Mus musculus... 462 e-128  
 AA387311, AA387311 vc19a03.r1 Ko mouse embryo 11 5dpc Mus mus... 264 6e-69  
 AA163072, AA163072 ms31a11.r1 Stratagene mouse skin (#937313)... 212 2e-53  
 AA596763, AA596763 vm60a10.r1 Stratagene mouse Tcell 937311 M... 178 3e-43  
 AA562549, AA562549 vl63a11.r1 Knowles Solter mouse blastocyst... 143 2e-32  
 AA212378, AA212378 mu44c03.r1 Soares 2NbMT Mus musculus cDNA ... 113 1e-23  
 AA450862, AA450862 vg55h12.r1 Beddington mouse embryonic regi... 111 5e-23  
 AA990073, AA990073 ua59a01.r1 Soares 2NbMT Mus musculus cDNA ... 86 3e-15  
 AA921175, AA921175 vy54b10.r1 Stratagene mouse lung 937302 Mu... 78 8e-13  
 AA261119, AA261119 mz89e01.r1 Soares mouse NML Mus musculus c... 38 0.65  
 AI005952, AI005952 ua80f06.r1 Soares 2NbMT Mus musculus cDNA ... 36 2.6  
 AA123274, AA123274 mn23a08.r1 Beddington mouse embryonic regi... 36 2.6  
 AI036828, AI036828 vw96c02.r1 Stratagene mouse skin (#937313)... 36 2.6

H35787, H35787 EST109178 Rat PC-12 cells, NGF-treated (9 days... 105 3e-21  
 AA686082, AA686082 EST109179 Rat PC-12 cells, NGF-treated (9 ... 86 3e-15  
 C23464, C23464 Jpanese flounder liver cDNA, LE5(10) 72 4e-11  
 C23465, C23465 Jpanese flounder liver cDNA, LE5(10) 56 2e-06  
 AA520314, AA520314 TgESTzz38h12.r1 TgME49 invivo Bradyzoite c... 38 0.57  
 AA520085, AA520085 TgESTzz37g05.r1 TgME49 invivo Bradyzoite c... 38 0.57  
 AA520033, AA520033 TgESTzz36f10.r1 TgME49 invivo Bradyzoite c... 38 0.57  
 AA012516, AA012516 TgESTzz23f04.r1 TgME49cDNA Toxoplasma gond... 38 0.57  
 AA274286, AA274286 TgESTzz24c01.s1 TgME49 invivo Bradyzoite c... 38 0.57  
 AA660585, AA660585 00471 MtRHE Medicago truncatula cDNA 5' si... 38 0.57  
 L35828, BNAESTBD Brassica rapa (clone F0621) expressed sequen... 38 0.57  
 AA520070, AA520070 TgESTzz37e05.r1 TgME49 invivo Bradyzoite c... 38 0.57  
 C30080, C30080 C.elegans cDNA clone yk236c3 : 3' end, single... 36 2.3  
 C39044, C39044 C.elegans cDNA clone yk505a4 : 3' end, single... 36 2.3  
 C55023, C55023 C.elegans cDNA clone yk422a3 : 3' end, single... 36 2.3  
 AA542589, AA542589 fa08d06.s1 Zebrafish ICRFzfls Danio rerio ... 36 2.3  
 N25370, N25370 EST000480 Schistosoma mansoni cDNA clone SMTBA... 36 2.3  
 AA820625, AA820625 LD24443.5prime LD Drosophila melanogaster ... 36 2.3  
 AA494922, AA494922 fa12g10.r1 Zebrafish ICRFzfls Danio rerio ... 36 2.3  
 AA495181, AA495181 fa04d06.s1 Zebrafish ICRFzfls Danio rerio ... 36 2.3  
 D73287, CELK116G6R C.elegans cDNA clone yk116g6 : 3' end, si... 36 2.3  
 C28238, C28238 Rice cDNA, partial sequence (C60429\_1A) 36 2.3

SEQ ID NO:557

AF039693, AF039693 Homo sapiens unknown protein mRNA, complet... 948 0.0  
 S51239, S51239 calreticulin [*Aplysia californica*=marine snail... 56 1e-05  
 Z74035, CEF47G9 *Caenorhabditis elegans* cosmid F47G9, complet... 46 0.012  
 U25723, CPU25723 *Cavia porcellus* alpha-2B adrenoceptor gene, ... 44 0.047  
 AL021407, HS13D10 Homo sapiens DNA sequence from PAC 13D10 o... 42 0.19  
 U67572, U67572 *Methanococcus jannaschii* section 114 of 150 of... 42 0.19  
 V01470, ZMZE01 Zea mays gene encoding a zein gene (clone lam... 42 0.19  
 U06631, HSU06631 Human (H326) mRNA, complete cds. 42 0.19  
 X82638, CSCYTOX *C.sordelii* cytotoxin gene 42 0.19  
 AE000926, AE000926 *Methanobacterium thermoautotrophicum* from ... 42 0.19  
 AC004135, AC004135 Genomic sequence for *Arabidopsis thaliana* ... 42 0.19  
 AC003010, HUAC003010 Homo sapiens Chromosome 16 BAC clone CIT... 40 0.74  
 AF050157, MMHC135G15 *Mus musculus* major histocompatibility lo... 40 0.74  
 AC002352, AC002352 Homo sapiens 12q24 PAC P256D10 complete se... 40 0.74  
 X07699, MMNUCLEO Mouse nucleolin gene 40 0.74  
 X02399, MMHOM6 Mouse embryonal carcinoma DNA fragment contai... 40 0.74  
 M93661, RATNOTCHX Rat notch 2 mRNA. 40 0.74  
 M17440, MUSMHC4H2S Mouse MHC (H-2) S region complement compon... 40 0.74  
 U15972, MMU15972 *Mus musculus* homeobox (*Hoxa7*) gene, complete... 40 0.74  
 AB001601, AB001601 Homo sapiens DBP2 mRNA for ATP-dependent ... 40 0.74  
 U09820, HSU09820 Human helicase II (*RAD54L*) mRNA, complete cds. 40 0.74  
 AB011149, AB011149 Homo sapiens mRNA for KIAA0577 protein, c... 40 0.74  
 U26259, MMU26259 *Mus musculus* C2-H2 zinc finger protein mRNA,... 40 0.74  
 L48363, MUSZFPTR *Mus musculus* zinc finger protein gene, compl... 40 0.74  
 AC003113, AC003113 *Arabidopsis thaliana* BAC F24O1 chromosome ... 40 0.74  
 D76432, D76432 Mouse mRNA for transcriptional repressor delt... 40 0.74  
 U72937, HSU72937 Human putative DNA dependent ATPase and heli... 40 0.74  
 U72915, HSATRX16 Human putative DNA dependent ATPase and heli... 40 0.74  
 U00995, U00995 *Rattus norvegicus* TA1 mRNA, complete cds. 40 0.74  
 Z48618, SCCHVII35 *S.cerevisiae* genes for *RAD54*, *ACE1*(*CUP2*), ... 40 0.74  
 U75653, HSU75653 Human zinc finger helicase (*Znf-HX*) mRNA, co... 40 0.74  
 Z72672, SCYGL150C *S.cerevisiae* chromosome VII reading frame ... 40 0.74  
 Z50109, CEC09H10 *Caenorhabditis elegans* cosmid C09H10, compl... 40 0.74  
 AF013969, AF013969 *Mus musculus* antigen containing epitope to... 40 0.74  
 M95627, HUMAAMP1X Homo sapiens angio-associated migratory cel... 40 0.74  
 U72936, HSU72936 Human putative DNA dependent ATPase and heli... 40 0.74  
 M88753, DROHTCHRPI Fruitfly heterochromatin protein-1 gene, c... 40 0.74  
 U76906, REU76906 *Rhizobium etli* FixK (*fixK*), *FixN* (*fixN*), mon... 40 0.74  
 U97085, HSXNP14 Homo sapiens X-linked nuclear protein (*ATRX*) ... 40 0.74  
 L34363, HUMNUCPRO Human X-linked nuclear protein (*XNP*) gene, ... 40 0.74  
 U72938, HSU72938 Human putative DNA dependent ATPase and heli... 40 0.74

X56983, EAVATP1 E.arvense gene for catalytic 70kDa V-ATPase ... 40 0.74  
 U88539, MMU88539 Mus musculus chromatin structural protein ho... 40 0.74  
 U07704, HSU07704 Human protein kinase PITSLRE isoform PBETA21... 38 2.9  
 U07705, HSU07705 Human protein kinase PITSLRE isoform PBETA22... 38 2.9  
 AF019612, AF019612 Homo sapiens S2P mRNA, complete cds 38 2.9  
 U04818, HSU04818 Human protein kinase PITSLRE alpha 2-4 mRNA,... 38 2.9  
 AB002381, AB002381 Human mRNA for KIAA0383 gene, partial cds 38 2.9  
 AB009520, AB009520 Pyrococcus horikoshii OT3 genomic DNA, 13... 38 2.9  
 Z83848, HS57A13 Human DNA sequence from PAC 57A13 between ma... 38 2.9  
 AC004592, AC004592 Homo sapiens PAC clone DJ0244J05 from 5q31... 38 2.9  
 L11710, ZEFZCMYC Brachydanio rerio c-myc oncoprotein mRNA, co... 38 2.9  
 D43920, CHKMETASE Chicken mRNA for DNA (cytosine-5-)-methylt... 38 2.9  
 U49056, RNU49056 Rattus norvegicus CTD-binding SR-like protei... 38 2.9  
 U04824, HSU04824 Human protein kinase PITSLRE alpha 2-1 mRNA,... 38 2.9  
 U78045, HSU78045 Human collagenase and stromelysin genes, com... 38 2.9  
 U04816, HSU04816 Human protein kinase PITSLRE alpha 2-2 mRNA,... 38 2.9  
 U04817, HSU04817 Human protein kinase PITSLRE alpha 2-3 mRNA,... 38 2.9

#### HUMAN ESTs

AA639190, AA639190 ns04a01.r1 NCI\_CGAP\_Ew1 Homo sapiens cDNA ... 519 e-145  
 AA172199, AA172199 zo96a06.r1 Stratagene ovarian cancer (#937... 513 e-144  
 R23642, R23642 yh35e03.r1 Homo sapiens cDNA clone 131740 5'. 490 e-136  
 AA902270, AA902270 ok69e04.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 450 e-124  
 AA947303, AA947303 ok20d04.s1 Soares\_NSF\_F8\_9W\_OT\_PA\_P\_S1 Hom... 402 e-110  
 AA588066, AA588066 nk10d08.s1 NCI\_CGAP\_Co2 Homo sapiens cDNA ... 347 1e-93  
 AA412036, AA412036 zt68d09.s1 Soares testis NHT Homo sapiens ... 347 1e-93  
 AA480337, AA480337 ne33a03.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 347 1e-93  
 AA508745, AA508745 ni23a03.s1 NCI\_CGAP\_Co4 Homo sapiens cDNA ... 347 1e-93  
 AA172083, AA172083 zo96a06.s1 Stratagene ovarian cancer (#937... 315 4e-84  
 AA811913, AA811913 ob51d06.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 299 2e-79  
 AA402403, AA402403 zt68d09.r1 Soares testis NHT Homo sapiens ... 299 2e-79  
 AA725458, AA725458 ai16g01.s1 Soares parathyroid tumor NbHPA ... 250 2e-64  
 R26558, R26558 yh35e02.s1 Homo sapiens cDNA clone 131738 3'. 250 2e-64  
 W25749, W25749 11b4 Human retina cDNA randomly primed sublibr... 103 3e-20  
 W27158, W27158 22h9 Human retina cDNA randomly primed sublibr... 66 6e-09  
 AA737681, AA737681 nw63c04.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 42 0.090  
 T65784, T65784 yc11f10.s1 Homo sapiens cDNA clone 80395 3' si... 42 0.090  
 R52021, R52021 yg84h09.r1 Homo sapiens cDNA clone 40181 5' si... 42 0.090  
 AA569993, AA569993 nm47h04.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 42 0.090  
 R50149, R50149 yj61c05.s1 Homo sapiens cDNA clone 153224 3' s... 42 0.090  
 R87930, R87930 yo47a11.s1 Homo sapiens cDNA clone 181052 3' s... 42 0.090  
 AA812204, AA812204 ob84f01.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 42 0.090  
 AA770224, AA770224 ah82e12.s1 Soares testis NHT Homo sapiens ... 42 0.090

D29591, HUMNK752	Human keratinocyte cDNA, clone 752	40	0.36
AA324325, AA324325	EST27219 Cerebellum II Homo sapiens cDNA 5'	40	0.36
AA053063, AA053063	zl71c03.r1 Stratagene colon (#937204) Homo...	40	0.36
T35539, T35539	EST86964 Homo sapiens cDNA 5' end similar to N...	40	0.36
AA974278, AA974278	oq14d03.s1 NCI_CGAP_GC4 Homo sapiens cDNA ...	40	0.36
W26196, W26196	22b5 Human retina cDNA randomly primed sublibr...	40	0.36
H92585, H92585	yt89c03.s1 Homo sapiens cDNA clone 231460 3'.	40	0.36
AA232334, AA232334	zr27b04.r1 Stratagene NT2 neuronal precurs...	40	0.36
N55775, N55775	J2481F Homo sapiens cDNA clone J2481 5'.	40	0.36
R98701, R98701	yr31f08.s1 Homo sapiens cDNA clone 206919 3'.	40	0.36
C14370, C14370	Human fetal brain cDNA 5'-end GEN-050F01	40	0.36
H19156, H19156	yn50c01.r1 Homo sapiens cDNA clone 171840 5'.	40	0.36
AA299557, AA299557	EST12080 Uterus tumor I Homo sapiens cDNA ...	40	0.36
W84460, W84460	zd89d12.r1 Soares fetal heart NbHH19W Homo sap...	40	0.36
T54194, T54194	ya90a02.r2 Homo sapiens cDNA clone 68906 5'.	40	0.36
AA100203, AA100203	zm16f12.r1 Stratagene pancreas (#937208) H...	38	1.4
AA993061, AA993061	ot92h08.s1 Soares_total_fetus_Nb2HF8_9w Ho...	38	1.4
R53406, R53406	yj70d07.r1 Homo sapiens cDNA clone 154093 5' s...	38	1.4
H99671, H99671	yx35b03.s1 Homo sapiens cDNA clone 263693 3'.	38	1.4
W03410, W03410	za07c09.r1 Soares melanocyte 2NbHM Homo sapien...	38	1.4
N35475, N35475	yy24b03.s1 Homo sapiens cDNA clone 272141 3'.	38	1.4
AA630851, AA630851	nt57f04.s1 NCI_CGAP_Pr3 Homo sapiens cDNA ...	38	1.4
N66458, N66458	yz41b08.s1 Homo sapiens cDNA clone 285591 3'.	38	1.4
AA736438, AA736438	zh31b09.s1 Soares pineal gland N3HPG Homo ...	38	1.4
AA911761, AA911761	og19b01.s1 NCI_CGAP_PNS1 Homo sapiens cDNA...	38	1.4
AA085513, AA085513	zn43a10.r1 Stratagene HeLa cell s3 937216 ...	38	1.4
AA678530, AA678530	ah02e05.s1 Gessler Wilms tumor Homo sapien...	38	1.4
AA782011, AA782011	ai75b12.s1 Soares testis NHT Homo sapiens ...	38	1.4
F12352, HSC38H091	H. sapiens partial cDNA sequence; clone c-...	38	1.4
AA861288, AA861288	ak33g01.s1 Soares testis NHT Homo sapiens ...	38	1.4
AA908705, AA908705	ol01b09.s1 NCI_CGAP_Lu5 Homo sapiens cDNA ...	38	1.4
AA298850, AA298850	EST114450 Thyroid Homo sapiens cDNA 5' end	38	1.4
AA237204, AA237204	mx18d02.r1 Soares mouse NML Mus musculus c...	172	1e-41
AI047347, AI047347	ud65c01.y1 Sugano mouse liver mlia Mus mus...	42	0.032
AA832736, AA832736	vw45g10.r1 Soares mouse mammary gland NbMM...	42	0.032
AA960471, AA960471	vw63a05.s1 Soares mouse mammary gland NMLM...	40	0.13
AA880584, AA880584	vw92e01.r1 Stratagene mouse skin (#937313)...	40	0.13
AA107508, AA107508	mp05e07.r1 Life Tech mouse embryo 8 5dpc l...	40	0.13
AA116682, AA116682	mn28c06.r1 Beddington mouse embryonic regi...	40	0.13
AA522310, AA522310	vi45b02.r1 Beddington mouse embryonic regi...	40	0.13
AA162231, AA162231	mn44h02.r1 Beddington mouse embryonic regi...	40	0.13

AA414037, AA414037 vc68g03.s1 Knowles Solter mouse 2 cell Mus... 40 0.13  
AA596585, AA596585 vm58e12.r1 Stratagene mouse Tcell 937311 M... 38 0.51  
AA863563, AA863563 vx05a10.r1 Soares 2NbMT Mus musculus cDNA ... 38 0.51  
AA795177, AA795177 vq94g04.r1 Knowles Solter mouse blastocyst... 38 0.51  
AA914764, AA914764 vy92h04.r1 Soares mouse mammary gland NbMM... 38 0.51  
AA590440, AA590440 vm20c04.r1 Knowles Solter mouse blastocyst... 38 0.51  
AA563402, AA563402 vl75d08.r1 Knowles Solter mouse blastocyst... 38 0.51  
AA260352, AA260352 va93c10.r1 Soares mouse 3NME12 5 Mus muscu... 38 0.51  
AA444734, AA444734 ve75d10.r1 Soares mouse mammary gland NbMM... 38 0.51  
C85885, C85885 Mus musculus fertilized egg cDNA 3'-end seque... 38 0.51  
AA794590, AA794590 vu78h12.r1 Stratagene mouse skin (#937313)... 38 0.51  
AA529643, AA529643 vi38a09.r1 Beddington mouse embryonic regi... 38 0.51  
AA607084, AA607084 vm84a09.r1 Knowles Solter mouse blastocyst... 38 0.51  
AA636994, AA636994 vn05g06.r1 Knowles Solter mouse blastocyst... 38 0.51  
AA675676, AA675676 vr73h08.s1 Knowles Solter mouse 2 cell Mus... 38 0.51  
AA163890, AA163890 ms52f09.r1 Life Tech mouse embryo 13 5dpc ... 38 0.51  
C80539, C80539 Mus musculus 3.5-dpc blastocyst cDNA 3'-end s... 38 0.51  
AA051352, AA051352 mj53a09.r1 Soares mouse embryo NbME13.5 14... 38 0.51  
W36885, W36885 mb64f09.r1 Soares mouse p3NMF19.5 Mus musculus... 38 0.51  
AA930627, AA930627 vy67c05.r1 Stratagene mouse macrophage (#9... 38 0.51  
AA244639, AA244639 mx02g12.r1 Soares mouse NML Mus musculus c... 36 2.0  
AA967267, AA967267 vz70e08.r1 Soares mouse mammary gland NbMM... 36 2.0  
AI048938, AI048938 uc84h06.y1 Sugano mouse kidney mkia Mus mu... 36 2.0  
AA162722, AA162722 mn42b07.r1 Beddington mouse embryonic regi... 36 2.0  
AA170036, AA170036 ms52d01.r1 Life Tech mouse embryo 13 5dpc ... 36 2.0  
AA511382, AA511382 vg14b04.r1 Soares mouse NbMH Mus musculus ... 36 2.0  
AA555634, AA555634 vk49f08.r1 Stratagene mouse Tcell 937311 M... 36 2.0  
AA212823, AA212823 mw81c07.r1 Soares mouse NML Mus musculus c... 36 2.0  
AA606813, AA606813 vm90h12.r1 Knowles Solter mouse blastocyst... 36 2.0  
AA591610, AA591610 vk49d08.r1 Stratagene mouse Tcell 937311 M... 36 2.0  
AA987039, AA987039 uc74e05.x1 Sugano mouse liver mlia Mus mus... 36 2.0  
AA105882, AA105882 ml84h07.r1 Stratagene mouse kidney (#93731... 36 2.0  
AA451370, AA451370 vf84h02.r1 Soares mouse mammary gland NbMM... 36 2.0  
AA612185, AA612185 vo03d05.r1 Stratagene mouse skin (#937313)... 36 2.0  
AA103424, AA103424 mo21e05.r1 Life Tech mouse embryo 13 5dpc ... 36 2.0  
AA145817, AA145817 mq68a12.r1 Soares 2NbMT Mus musculus cDNA ... 36 2.0  
AA272905, AA272905 va39d01.r1 Soares mouse 3NME12 5 Mus muscu... 36 2.0  
AA237313, AA237313 mx17b11.r1 Soares mouse NML Mus musculus c... 36 2.0  
AA267119, AA267119 mz74d07.r1 Soares mouse lymph node NbMLN M... 36 2.0  
AA106683, AA106683 ml83h06.r1 Stratagene mouse kidney (#93731... 36 2.0  
AA125061, AA125061 mq83d10.r1 Stratagene mouse melanoma (#937... 36 2.0  
AA655241, AA655241 vq84c07.s1 Knowles Solter mouse 2 cell Mus... 36 2.0  
AA512835, AA512835 vg13f11.r1 Soares mouse NbMH Mus musculus ... 36 2.0



C70525, C70525 *C.elegans* cDNA clone yk409g6 : 5' end, single... 44 0.007  
 F15112, SSO4D09 *S.scrofa* mRNA; expressed sequence tag (5'; c... 42 0.029  
 AA684640, AA684640 EST104989 Rat PC-12 cells, untreated Rattu... 40 0.11  
 H32045, H32045 EST106774 Rat PC-12 cells, untreated Rattus sp... 40 0.11  
 AA660422, AA660422 00298 MtrHE *Medicago truncatula* cDNA 5' 40 0.11  
 C59696, C59696 *C.elegans* cDNA clone yk440e1 : 3' end, single... 38 0.45  
 AI008699, AI008699 EST203150 Normalized rat embryo, Bento Soa... 38 0.45  
 AA753263, AA753263 96BS0294 Rice Immature Seed Lambda ZAPII c... 38 0.45  
 T38461, T38461 EST103957 *Saccharomyces cerevisiae* cDNA 3' end. 38 0.45  
 C59257, C59257 *C.elegans* cDNA clone yk386b12 : 3' end, singl... 38 0.45  
 AA948906, AA948906 LD27590.5prime LD *Drosophila melanogaster* ... 38 0.45  
 AI001628, AI001628 EST0210 *Tilapia* brain cDNA library in pUC1... 38 0.45  
 H31962, H31962 EST106545 Rat PC-12 cells, untreated Rattus sp... 38 0.45  
 AA979509, AA979509 LD34118.5prime LD *Drosophila melanogaster* ... 38 0.45  
 D41274, RICS3647A Rice cDNA, partial sequence (S3647\_1A). 38 0.45  
 C58362, C58362 *C.elegans* cDNA clone yk366a8 : 3' end, single... 38 0.45  
 C57756, C57756 *C.elegans* cDNA clone yk298b9 : 3' end, single... 38 0.45  
 AA753070, AA753070 97AS2091 Rice Immature Seed Lambda ZAPII c... 38 0.45  
 H74687, H74687 383 *Brassica napus* cDNA clone R25R. 38 0.45  
 C10513, C10513 *C.elegans* cDNA clone yk147e9 : 3' end, single... 38 0.45  
 C55569, C55569 *C.elegans* cDNA clone yk191d1 : 3' end, single... 38 0.45  
 C94819, C94819 *Sus scrofa* mRNA; expressed sequence tag (5'; ... 38 0.45  
 C32982, C32982 *C.elegans* cDNA clone yk338a12 : 3' end, singl... 38 0.45  
 AA816691, AA816691 LD03795.5prime LD *Drosophila melanogaster* ... 36 1.8  
 AA519844, AA519844 TgESTzz36c03.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA531839, AA531839 TgESTzz47h05.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA660182, AA660182 00022 MtrHE *Medicago truncatula* cDNA 5' si... 36 1.8  
 D71983, CELK084H2R *C.elegans* cDNA clone yk84h2 : 3' end, sin... 36 1.8  
 R29905, R29905 12510 Lambda-PRL2 *Arabidopsis thaliana* cDNA cl... 36 1.8  
 AA519997, AA519997 TgESTzz36h03.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 U83048, BTU83048 *Bos taurus* clone 0429 mRNA sequence 36 1.8  
 AA440655, AA440655 LD15510.5prime LD *Drosophila melanogaster* ... 36 1.8  
 AA559374, AA559374 MU002092.NH3 York-Harrop-lung-A *Schistosom*... 36 1.8  
 C93857, C93857 *Dictyostelium discoideum* slug cDNA, clone SSL794 36 1.8  
 AA520901, AA520901 TgESTzz65a05.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 T46158, T46158 9421 Lambda-PRL2 *Arabidopsis thaliana* cDNA clo... 36 1.8  
 AA520866, AA520866 TgESTzz68e05.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 Z17562, ATTS0136 *A. thaliana* transcribed sequence; clone TAT... 36 1.8  
 AA520811, AA520811 TgESTzz64d05.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA567455, AA567455 HL01288.5prime HL *Drosophila melanogaster* ... 36 1.8  
 AA519228, AA519228 TgESTzz39h02.s1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA531917, AA531917 TgESTzz48f01.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA519829, AA519829 TgESTzz36a02.r1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA520185, AA520185 TgESTzz39d03.s1 TgME49 invivo Bradyzoite c... 36 1.8  
 C37095, C37095 *C.elegans* cDNA clone yk482c11 : 3' end, singl... 36 1.8

T46009, T46009 9272 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 1.8  
 T20458, T20458 2466 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 1.8  
 F14402, ATTS5324 A. thaliana transcribed sequence; clone TAP... 36 1.8  
 T20404, T20404 2412 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 1.8  
 AA274295, AA274295 TgESTzz24c11.s1 TgME49 invivo Bradyzoite c... 36 1.8  
 AA699152, AA699152 HL07807.5prime HL Drosophila melanogaster ... 36 1.8  
 AA902065, AA902065 NCM1A12T3 Mycelial Neurospora crassa cDNA ... 36 1.8

SEQ ID NO:558

AF016585, AF016585 Streptomyces caelestis cytochrome P-450 hy... 42 0.092  
 U50719, MSU50719 Manduca sexta neuroglian mRNA, complete cds 40 0.36  
 Z97208, SPAC15A10 S.pombe chromosome I cosmid c15A10 40 0.36  
 AC003063, AC003063 Mus musculus Chromosome 16 BAC Clone b40-o... 40 0.36  
 X66455, MMFGFR2 M.musculus promoter region of fibroblast gro... 40 0.36  
 D83785, D83785 Human mRNA for KIAA0200 gene, complete cds 40 0.36  
 AC000398, AC000398 Genomic sequence from Mouse 11, complete s... 38 1.4  
 AF062345, AF062345 Caulobacter crescentus Sts1 (sts1), S-laye... 38 1.4  
 X12359, RCNIFR12 Rhodobacter capsulatus nifR1 and nifR2 gene 38 1.4  
 X72382, RCNIFR3 R.capsulatus nifR3 DNA 38 1.4

#### HUMAN ESTs

R36714, R36714 yh93g06.s1 Homo sapiens cDNA clone 137338 3'. 775 0.0  
 D61030, HUM149A04B Human fetal brain cDNA 5'-end GEN-149A04. 666 0.0  
 D60944, HUM141D02B Human fetal brain cDNA 5'-end GEN-141D02. 656 0.0  
 H03308, H03308 yj47d09.s1 Homo sapiens cDNA clone 151889 3'. 609 e-172  
 AA435561, AA435561 zt73d09.s1 Soares testis NHT Homo sapiens ... 587 e-166  
 AA977877, AA977877 oq56d03.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 571 e-161  
 AA846787, AA846787 aj41h03.s1 Soares testis NHT Homo sapiens ... 563 e-159  
 AA972542, AA972542 oo82e01.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 561 e-158  
 AA954270, AA954270 on72e06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 557 e-157  
 AA740333, AA740333 ob23c02.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 557 e-157  
 AA999722, AA999722 ov04c06.s1 NCI\_CGAP\_Kid3 Homo sapiens cDNA... 555 e-156  
 AA970621, AA970621 op40h08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 551 e-155  
 AA932930, AA932930 oo04g11.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 541 e-152  
 AA725406, AA725406 ai13b11.s1 Soares parathyroid tumor NbHPA ... 539 e-152  
 W74439, W74439 zd75d10.s1 Soares fetal heart NbHH19W Homo sap... 539 e-152  
 AA868538, AA868538 ak43e08.s1 Soares testis NHT Homo sapiens ... 539 e-152  
 R79832, R79832 yi89b08.s1 Homo sapiens cDNA clone 146391 3' s... 537 e-151

R63227, R63227 yi07e06.s1 Homo sapiens cDNA clone 138562 3'. 535 e-150  
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 AA776717, AA776717 ah49d07.s1 Soares testis NHT Homo sapiens ... 535 e-150  
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 AI024835, AI024835 ov35h09.x1 Soares\_testis\_NHT Homo sapiens ... 533 e-150  
 AA740667, AA740667 ob01g12.s1 NCI\_CGAP\_Kid3 Homo sapiens cDNA... 531 e-149  
 AA994527, AA994527 ou42h06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 531 e-149  
 AA932728, AA932728 oo31g06.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 529 e-149  
 AI001978, AI001978 ot39f03.s1 Soares\_testis\_NHT Homo sapiens ... 529 e-149  
 N37092, N37092 yy41g08.s1 Homo sapiens cDNA clone 273854 3'. 529 e-149  
 N27547, N27547 yy01e05.s1 Homo sapiens cDNA clone 269984 3'. 527 e-148  
 AA883578, AA883578 al46b08.s1 Soares NFL T GBC S1 Homo sapien... 527 e-148  
 AA890154, AA890154 al53f07.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 525 e-147  
 AA757222, AA757222 ah56f11.s1 Soares testis NHT Homo sapiens ... 525 e-147  
 AA456074, AA456074 aa17b07.s1 Soares NhHMPu S1 Homo sapiens c... 523 e-147  
 AA884285, AA884285 am32f04.s1 Soares NFL T GBC S1 Homo sapien... 523 e-147  
 AA969436, AA969436 op53e12.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 521 e-146  
 AA952918, AA952918 on55h11.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 521 e-146  
 AA971938, AA971938 op88b01.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 521 e-146  
 R25112, R25112 yh36b12.s1 Homo sapiens cDNA clone 131807 3'. 519 e-146  
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 AA972041, AA972041 op88e06.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 519 e-146  
 R76443, R76443 yi58e11.s1 Homo sapiens cDNA clone 143468 3'. 519 e-146  
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 AA758549, AA758549 ah70b04.s1 Soares testis NHT Homo sapiens ... 517 e-145  
 AA927156, AA927156 om20f05.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 515 e-144  
 AA976254, AA976254 oo30f08.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 515 e-144  
 R23891, R23891 yh28a12.s1 Homo sapiens cDNA clone 131038 3'. 515 e-144  
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 AA483809, AA483809 ne41c08.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 513 e-144  
 AA962659, AA962659 or31f10.s1 NCI\_CGAP\_GC3 Homo sapiens cDNA ... 511 e-143  
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 AA775373, AA775373 ad19c07.s1 Soares NbHFB Homo sapiens cDNA ... 511 e-143  
 AA758038, AA758038 ah67h09.s1 Soares testis NHT Homo sapiens ... 509 e-143  
 AA904368, AA904368 ol15d02.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 509 e-143  
 AA861386, AA861386 ak37b11.s1 Soares testis NHT Homo sapiens ... 507 e-142  
 R31547, R31547 yh72g03.s1 Homo sapiens cDNA clone 135316 3'. 505 e-141  
 AA843421, AA843421 ak07f11.s1 Soares parathyroid tumor NbHPA ... 504 e-141  
 H02479, H02479 yj35e10.s1 Homo sapiens cDNA clone 150762 3'. 504 e-141  
 N29346, N29346 yw85c12.s1 Homo sapiens cDNA clone 259030 3'. 504 e-141  
 AA815351, AA815351 ai63g05.s1 Soares testis NHT Homo sapiens ... 504 e-141

AA923373, AA923373 ol46e03.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 502 e-140  
H01218, H01218 yj31c08.s1 Homo sapiens cDNA clone 150350 3'. 500 e-140  
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AA628621, AA628621 af40c02.s1 Soares total fetus Nb2HF8 9w Ho... 500 e-140  
AA442745, AA442745 zv60a07.s1 Soares testis NHT Homo sapiens ... 498 e-139  
AA777492, AA777492 zj02e07.s1 Soares fetal liver spleen 1NFLS... 498 e-139  
R73670, R73670 yi55f03.s1 Homo sapiens cDNA clone 143165 3'. 498 e-139  
H12460, H12460 yj12d05.s1 Homo sapiens cDNA clone 148521 3'. 498 e-139  
AA875917, AA875917 oj15a08.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 496 e-138  
R76230, R76230 yi71g11.s1 Homo sapiens cDNA clone 144740 3'. 494 e-138  
AA970616, AA970616 op40h03.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 494 e-138  
AA912408, AA912408 ol23a05.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 492 e-137  
AA910051, AA910051 ol40e08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 492 e-137  
AA815444, AA815444 ai65b11.s1 Soares testis NHT Homo sapiens ... 492 e-137  
R76814, R76814 yi62f06.s1 Homo sapiens cDNA clone 143843 3'. 488 e-136  
AA954722, AA954722 oo84c12.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 488 e-136  
R65987, R65987 yi23e10.s1 Homo sapiens cDNA clone 140106 3'. 486 e-136  
R63480, R63480 yi08e11.s1 Homo sapiens cDNA clone 138668 3'. 486 e-136  
AA885425, AA885425 am12h09.s1 Soares NFL T GBC S1 Homo sapien... 486 e-136  
AA884231, AA884231 am32a01.s1 Soares NFL T GBC S1 Homo sapien... 484 e-135  
AA885048, AA885048 am11a12.s1 Soares NFL T GBC S1 Homo sapien... 482 e-134  
AA996162, AA996162 os14f10.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 482 e-134  
AA748637, AA748637 ny10a02.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 482 e-134  
AI031908, AI031908 ow47e12.x1 Soares\_parathyroid\_tumor\_NbHPA ... 482 e-134  
AA884703, AA884703 am18e02.s1 Soares NFL T GBC S1 Homo sapien... 480 e-134  
AA928243, AA928243 on87c10.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 480 e-134  
AI025986, AI025986 ow03a09.s1 Soares\_parathyroid\_tumor\_NbHPA ... 478 e-133  
AA897637, AA897637 oj72g07.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 472 e-131  
AA877346, AA877346 01c07.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 472 e-131  
AA833569, AA833569 aj46b02.s1 Soares testis NHT Homo sapiens ... 472 e-131  
AA832163, AA832163 oc91b02.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 470 e-131  
R89052, R89052 ym99e08.s1 Homo sapiens cDNA clone 167078 3'. 470 e-131  
N26589, N26589 yx91f03.s1 Homo sapiens cDNA clone 269117 3'. 460 e-128  
R73883, R73883 yi56c03.s1 Homo sapiens cDNA clone 143236 3'. 454 e-126  
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AA843427, AA843427 ak07g06.s1 Soares parathyroid tumor NbHPA ... 438 e-121  
AA705903, AA705903 ah42g12.s1 Soares testis NHT Homo sapiens ... 436 e-121  
AA835882, AA835882 oc81d05.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 434 e-120  
AA812583, AA812583 aj43b02.s1 Soares testis NHT Homo sapiens ... 432 e-119  
AA512970, AA512970 nj16b08.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 432 e-119  
R26664, R26664 yh35g10.s1 Homo sapiens cDNA clone 131778 3'. 428 e-118  
AA429715, AA429715 zv60a07.r1 Soares testis NHT Homo sapiens ... 414 e-114  
H17430, H17430 ym40f09.s1 Homo sapiens cDNA clone 50607 3'. 404 e-111  
AA436117, AA436117 zu03d10.r1 Soares testis NHT Homo sapiens ... 402 e-110  
AA099077, AA099077 zl77a09.s1 Stratagene colon (#937204) Homo... 400 e-110

R72440, R72440 yj90h02.s1 Homo sapiens cDNA clone 156051 3'. 379 e-103  
 AA577436, AA577436 nm96h06.s1 NCI\_CGAP\_Co9 Homo sapiens cDNA ... 351 4e-95  
 AA516390, AA516390 nf55e03.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 347 6e-94  
 AA534533, AA534533 nf80h06.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 341 3e-92  
 AA541583, AA541583 ni89f05.s1 NCI\_CGAP\_Pr21 Homo sapiens cDNA... 311 3e-83  
 N72191, N72191 yz99f07.s1 Homo sapiens cDNA clone 291205 3'. 303 8e-81  
 AA905015, AA905015 ok09b08.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 303 8e-81  
 AA393148, AA393148 zt73d09.r1 Soares testis NHT Homo sapiens ... 287 4e-76  
 AA939048, AA939048 op56h04.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 256 2e-66  
 AA412317, AA412317 zt97c05.r1 Soares testis NHT Homo sapiens ... 246 2e-63  
 R65986, R65986 yi23e10.r1 Homo sapiens cDNA clone 140106 5'. 238 4e-61  
 AA400827, AA400827 zt76c07.s1 Soares testis NHT Homo sapiens ... 232 2e-59  
 W00472, W00472 yz99f07.r1 Homo sapiens cDNA clone 291205 5'. 180 8e-44  
 AA860558, AA860558 aj81e09.s1 Soares parathyroid tumor NbHPA ... 180 8e-44  
 AA455577, AA455577 aa17b07.r1 Soares NhHMPu S1 Homo sapiens c... 176 1e-42  
 AA583931, AA583931 nn64e04.s1 NCI\_CGAP\_Lar1 Homo sapiens cDNA... 172 2e-41  
 AA907332, AA907332 ol22g11.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 168 3e-40  
 R71169, R71169 yi53a12.r1 Homo sapiens cDNA clone 142942 5'. 159 3e-37  
 W79084, W79084 zd75d10.r1 Soares fetal heart NbHH19W Homo sap... 155 4e-36  
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 AA860415, AA860415 aj60d10.s1 Soares testis NHT Homo sapiens ... 100 2e-19  
 H01351, H01351 yi99a07.r1 Homo sapiens cDNA clone 147348 5'. 98 9e-19  
 AA709286, AA709286 ai21g07.s1 Soares testis NHT Homo sapiens ... 96 3e-18  
 AA931370, AA931370 oo03d01.s1 Soares\_NFL\_T\_GBC\_S1 Homo sapien... 96 3e-18  
 AA501911, AA501911 ng54a08.s1 NCI\_CGAP\_Li2 Homo sapiens cDNA ... 94 1e-17  
 AA548419, AA548419 nj14g09.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 92 5e-17  
 AA588892, AA588892 no23b06.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 92 5e-17  
 AI025228, AI025228 ov40h08.x1 Soares\_testis\_NHT Homo sapiens ... 76 3e-12  
 R73757, R73757 yi55f03.r1 Homo sapiens cDNA clone 143165 5'. 74 1e-11  
 R23710, R23710 yh35g10.r1 Homo sapiens cDNA clone 131778 5'. 56 3e-06  
 N40362, N40362 yy01e05.r1 Homo sapiens cDNA clone 269984 5'. 50 2e-04  
 H59895, H59895 yr04c12.r1 Homo sapiens cDNA clone 204310 5'. 48 7e-04  
 H12509, H12509 yj12d05.r1 Homo sapiens cDNA clone 148521 5'. 44 0.011  
 N20344, N20344 yx38d02.s1 Homo sapiens cDNA clone 264003 3'. 38 0.70  
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 H52973, H52973 yq82e04.r1 Homo sapiens cDNA clone 202302 5'. 36 2.7  
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 AA312481, AA312481 EST183215 Jurkat T-cells VI Homo sapiens c... 36 2.7  
 AA632009, AA632009 np74c07.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 36 2.7  
 H13363, H13363 yl71b10.r1 Homo sapiens cDNA clone 43343 5'. 36 2.7  
 AI022018, AI022018 ow64d01.x1 Soares\_senescent\_fibroblasts\_Nb... 36 2.7  
 AA781996, AA781996 ai75a06.s1 Soares testis NHT Homo sapiens ... 36 2.7  
 N21623, N21623 yx60a09.s1 Homo sapiens cDNA clone 266104 3'. 36 2.7  
 AA326194, AA326194 EST29340 Cerebellum II Homo sapiens cDNA 5... 36 2.7

C76071, C76071 Mus musculus 3.5-dpc blastocyst cDNA 3'-end s... 250 4e-65  
 AA051612, AA051612 mj52c07.r1 Soares mouse embryo NbME13.5 14... 238 1e-61  
 AA561635, AA561635 vl01h07.r1 Knowles Solter mouse blastocyst... 234 2e-60  
 AA288419, AA288419 vb14h01.r1 Soares mouse NML Mus musculus c... 220 3e-56  
 AA212883, AA212883 mw78e10.r1 Soares mouse NML Mus musculus c... 220 3e-56  
 AA268018, AA268018 vb08e07.r1 Soares mouse NML Mus musculus c... 212 8e-54  
 AA692427, AA692427 vt59b07.r1 Barstead mouse irradiated colon... 200 3e-50  
 W18566, W18566 mb98h02.r1 Soares mouse p3NMF19.5 Mus musculus... 192 7e-48  
 AA543948, AA543948 vj69b08.r1 Knowles Solter mouse blastocyst... 147 4e-34  
 W41070, W41070 mc39b06.r1 Soares mouse p3NMF19.5 Mus musculus... 123 5e-27  
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 AA530723, AA530723 vj32f07.r1 Stratagene mouse diaphragm (#93... 74 5e-12  
 AA966940, AA966940 ua38c01.r1 Soares mouse mammary gland NbMM... 72 2e-11  
 AA111079, AA111079 mp50e01.r1 Barstead MPLRBI Mus musculus cD... 44 0.004  
 AA049187, AA049187 mj51a02.r1 Soares mouse embryo NbME13.5 14... 36 0.99  
 AA058246, AA058246 mg74e12.r1 Soares mouse embryo NbME13.5 14... 36 0.99  
 AA153730, AA153730 mq60a02.r1 Soares 2NbMT Mus musculus cDNA ... 36 0.99  
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 AA033312, AA033312 mi43g01.r1 Soares mouse embryo NbME13.5 14... 36 0.99  
 AA980820, AA980820 ua46a04.r1 Soares mouse mammary gland NbMM... 36 0.99  
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 AA670807, AA670807 vs70b02.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA727571, AA727571 vv01h11.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA571966, AA571966 vg12f07.r1 Soares mouse NbMH Mus musculus ... 34 3.9  
 W37059, W37059 mb73f10.r1 Soares mouse p3NMF19.5 Mus musculus... 34 3.9  
 AA760280, AA760280 vv74h11.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA799036, AA799036 vn40c12.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA432831, AA432831 vf28g07.r1 Knowles Solter mouse 8 cell Mus... 34 3.9  
 AA562435, AA562435 vk98c01.r1 Knowles Solter mouse blastocyst... 34 3.9  
 AA726680, AA726680 vu93g12.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA217464, AA217464 mu87d11.r1 Soares mouse lymph node NbMLN M... 34 3.9  
 AA790564, AA790564 vx71e06.r1 Stratagene mouse skin (#937313)... 34 3.9  
 AA033172, AA033172 mi37f06.r1 Soares mouse embryo NbME13.5 14... 34 3.9  
 AA616204, AA616204 vo96h02.r1 Soares mouse mammary gland NbMM... 34 3.9  
 AA982055, AA982055 ua37h05.r1 Soares mouse mammary gland NbMM... 34 3.9  
 W47850, W47850 mc82h10.r1 Soares mouse embryo NbME13.5 14.5 M... 34 3.9  
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 AA636986, AA636986 vn05f04.r1 Knowles Solter mouse blastocyst... 34 3.9

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 AA944260, AA944260 EST199759 Normalized rat embryo, Bento Soa... 38 0.22  
 AI008930, AI008930 EST203381 Normalized rat embryo, Bento Soa... 36 0.87  
 D15788, RICC1258A Rice cDNA, partial sequence (C1258A). 36 0.87  
 AA963741, AA963741 UI-R-C0-gt-b-09-0-UI.s1 UI-R-C0 Rattus nor... 36 0.87  
 AA951235, AA951235 LD31601.3prime LD Drosophila melanogaster ... 34 3.5  
 C20118, C20118 Rice cDNA, partial sequence (E11542\_2A) 34 3.5  
 AA820317, AA820317 LD23876.5prime LD Drosophila melanogaster ... 34 3.5  
 AA950448, AA950448 LD30237.3prime LD Drosophila melanogaster ... 34 3.5

## SEQ ID NO:559

U83883, RNU83883 Rattus norvegicus p105 coactivator mRNA, com... 42 0.11  
 V00722, MMBGL1 Mouse gene for beta-1-globin. 40 0.45  
 X14061, MMBGCXD M.musculus beta-globin complex DNA for y, bh... 40 0.45  
 U20824, EHVU20824 Equine herpesvirus 2, complete genome 38 1.8  
 U04106, PFU04106 Pleurotus fossulatus D1822, mating group VI,... 38 1.8  
 U04101, POU04101 Pleurotus ostreatus D1742, Japan, mating gro... 38 1.8  
 AC005174, AC005174 Homo sapiens clone UWGC:g1564a012 from 7p1... 38 1.8  
 M18680, HUMRGAPS Homo sapiens 5S rRNA pseudogene. 38 1.8  
 AL022121, MTV025 Mycobacterium tuberculosis H37Rv complete g... 38 1.8  
 AF038379, AF038379 Leishmania amazonensis ribosomal protein S... 38 1.8  
 Z11528, THIGPMR T.harzianum mRNA for imidazoleglycerolphosphate 38 1.8  
 U32622, CTU32622 Comamonas testosteroni TsaR (tsaR), toluenes... 38 1.8  
 U04102, POU04102 Pleurotus ostreatus D1743, Japan, mating gro... 38 1.8  
 U04105, PFU04105 Pleurotus fossulatus D1821, mating group VI,... 38 1.8  
 U04109, PEU04109 Pleurotus eryngii D1832, mating group VI rib... 38 1.8  
 U65606, BSU65606 Basidiomycete from a bamboo (Phyllostachys p... 38 1.8

## HUMAN ESTs

R49969, R49969 yj56c07.s1 Homo sapiens cDNA clone 152748 3' s... 523 e-147  
 AA834501, AA834501 of21c02.s1 NCI\_CGAP\_Kid6 Homo sapiens cDNA... 381 e-104  
 W96422, W96422 ze43a05.s1 Soares retina N2b4HR Homo sapiens c... 315 2e-84  
 R47821, R47821 yj56c07.r1 Homo sapiens cDNA clone 152748 5'. 214 7e-54  
 AA761660, AA761660 nz24b09.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 212 3e-53  
 AA887861, AA887861 nq99b07.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 74 2e-11  
 AA644044, AA644044 nm20b12.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 72 6e-11

AA115963, AA115963 zm78d11.s1 Stratagene neuroepithelium (#93... 40 0.22  
AA779271, AA779271 zj43f02.s1 Soares fetal liver spleen 1NFLS... 40 0.22  
T65600, T65600 yc76a04.r1 Homo sapiens cDNA clone 21496 5'. 38 0.86  
AA515882, AA515882 nf67f10.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 38 0.86  
AA664812, AA664812 nu69b05.s1 NCI\_CGAP\_Alv1 Homo sapiens cDNA... 36 3.4  
T83365, T83365 ye03f05.s1 Homo sapiens cDNA clone 116673 3'. 36 3.4  
AA009773, AA009773 zi04d04.s1 Soares fetal liver spleen 1NFLS... 36 3.4  
AA916894, AA916894 og34g10.s1 NCI\_CGAP\_Br7 Homo sapiens cDNA ... 36 3.4  
N27865, N27865 yy02g03.s1 Homo sapiens cDNA clone 270100 3'. 36 3.4  
AA953544, AA953544 om79g06.s1 NCI\_CGAP\_Kid3 Homo sapiens cDNA... 36 3.4  
AA505576, AA505576 nh93f03.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 36 3.4  
H30276, H30276 yp42f05.s1 Homo sapiens cDNA clone 190113 3'. 36 3.4  
AA699914, AA699914 zi61f08.s1 Soares fetal liver spleen 1NFLS... 36 3.4  
AA595583, AA595583 nk92c04.s1 NCI\_CGAP\_Co11 Homo sapiens cDNA... 36 3.4  
AA351139, AA351139 EST58769 Infant brain Homo sapiens cDNA 5'... 36 3.4  
AA810167, AA810167 ob88a03.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 36 3.4  
H50257, H50257 yo28a07.r1 Homo sapiens cDNA clone 179220 5'. 36 3.4  
W19939, W19939 zb37e09.r1 Soares parathyroid tumor NbHPA Homo... 36 3.4  
R19840, R19840 yg30e11.r1 Homo sapiens cDNA clone 33837 5'. 36 3.4  
AA514234, AA514234 nf56e10.s1 NCI\_CGAP\_Co3 Homo sapiens cDNA ... 36 3.4

AA183407, AA183407 ms  
AA821640, AA821640 vw  
AA289310, AA289310

AA900756, AA900756 UI-R-E0-di-d-04-0-UI.s1 UI-R-E0 Rattus nor... 46 0.001  
T18416, T18416 6c02e07t7 etiolated seedling Zea mays cDNA clo... 40 0.069  
AA817427, AA817427 LD22827.5prime LD Drosophila melanogaster ... 36 1.1  
AA274351, AA274351 TgESTzz25c09.s1 TgME49 invivo Bradyzoite c... 36 1.1  
AA391823, AA391823 LD10747.5prime LD Drosophila melanogaster ... 36 1.1  
AA274275, AA274275 TgESTzz24b02.s1 TgME49 invivo Bradyzoite c... 34 4.3  
R86490, R86490 RABEST068T Oryctolagus cuniculus cDNA clone pR... 34 4.3  
AA965817, AA965817 o5g08a1.r1 Aspergillus nidulans 24hr asexu... 34 4.3

SEQ ID NO:560

X81198, L35746, L49403, U21317, Z35640, AL010273, U09850, AF071771, Z96434,



Z50028, X72735, U13072, Z34294, AB002109, X68401, M92840, D88399, Z36238, AF000262, Z46828,

# HUMAN ESTs

AA215808, AA215808 zr98b10.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 1082 0.0  
 N75131, N75131 yz29g07.r1 Soares multiple sclerosis 2NbHMSP H... 989 0.0  
 AA709149, AA709149 zf98g05.s1 Soares fetal heart NbHH19W Homo... 985 0.0  
 AA428341, AA428341 zw18f09.s1 Soares ovary tumor NbHOT Homo s... 967 0.0  
 AA043426, AA043426 zk54h09.r1 Soares pregnant uterus NbHPU Ho... 870 0.0  
 AA878521, AA878521 oj19c01.s1 NCI\_CGAP\_Kid5 Homo sapiens cDNA... 844 0.0  
 AA599696, AA599696 ag10h01.s1 Gessler Wilms tumor Homo sapien... 842 0.0  
 W52304, W52304 zc47c08.r1 Soares senescent fibroblasts NbHSF ... 841 0.0  
 AA043427, AA043427 zk54h09.s1 Soares pregnant uterus NbHPU Ho... 769 0.0  
 N64314, N64314 yz46a12.s1 Homo sapiens cDNA clone 286078 3'. 763 0.0  
 N52360, N52360 yz29g07.s1 Soares multiple sclerosis 2NbHMSP H... 753 0.0  
 AA290863, AA290863 zt19a08.s1 Soares ovary tumor NbHOT Homo s... 747 0.0  
 AA768023, AA768023 oa60e03.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 728 0.0  
 AA872018, AA872018 oi05f08.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 718 0.0  
 AA164765, AA164765 zp01g09.s1 Stratagene ovarian cancer (#937... 716 0.0  
 AA814881, AA814881 oa75e02.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 708 0.0  
 R86915, R86915 yq30f07.r1 Homo sapiens cDNA clone 197317 5'. 692 0.0  
 W56703, W56703 zd14e01.r1 Soares fetal heart NbHH19W Homo sap... 642 0.0  
 R84872, R84872 yq27e01.r1 Soares fetal liver spleen INFLS Hom... 636 0.0  
 D79691, HUM307D10B Human aorta cDNA 5'-end GEN-307D10. 630 e-179  
 AA025638, AA025638 ze90d11.s1 Soares fetal heart NbHH19W Homo... 626 e-178  
 AA298883, AA298883 EST114512 Pancreas tumor I Homo sapiens cD... 624 e-177  
 R86903, R86903 yq30d07.r1 Homo sapiens cDNA clone 197293 5'. 622 e-176  
 AA033584, AA033584 zk21b12.s1 Soares pregnant uterus NbHPU Ho... 618 e-175  
 AA633335, AA633335 nq58h09.s1 NCI\_CGAP\_Co9 Homo sapiens cDNA ... 611 e-173  
 AA298894, AA298894 EST114513 Pancreas tumor I Homo sapiens cD... 599 e-169  
 R85806, R85806 yq27e01.s1 Soares fetal liver spleen INFLS Hom... 595 e-168  
 AA872617, AA872617 oi05g07.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 591 e-167  
 H71458, H71458 yu71a06.s1 Homo sapiens cDNA clone 239218 3'. 587 e-166  
 AA291045, AA291045 zt19a08.r1 Soares ovary tumor NbHOT Homo s... 563 e-159  
 H71587, H71587 yu71a06.r1 Homo sapiens cDNA clone 239218 5'. 543 e-153  
 AA035172, AA035172 zk28g05.s1 Soares pregnant uterus NbHPU Ho... 523 e-147  
 AA164764, AA164764 zp01g09.r1 Stratagene ovarian cancer (#937... 517 e-145  
 AA297001, AA297001 EST112550 Adipose tissue, white II Homo sa... 502 e-140  
 AA296816, AA296816 EST112381 Aorta endothelial cells Homo sap... 500 e-139  
 AA769090, AA769090 oa74e12.s1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 494 e-138  
 H54447, H54447 yq91f04.s1 Homo sapiens cDNA clone 203167 3'. 438 e-121  
 H54537, H54537 yq91f04.r1 Homo sapiens cDNA clone 203167 5'. 436 e-120  
 AI049757, AI049757 an26g03.x1 Gessler Wilms tumor Homo sapien... 430 e-119

AA033583, AA033583 zk21b12.r1 Soares pregnant uterus NbHPU Ho... 422 e-116  
D61748, HUM205G02B Human aorta cDNA 5'-end GEN-205G02. 412 e-113  
AA148635, AA148635 zl26d10.r1 Soares pregnant uterus NbHPU Ho... 377 e-102  
AA148636, AA148636 zl26d10.s1 Soares pregnant uterus NbHPU Ho... 373 e-101  
AA025637, AA025637 ze90d11.r1 Soares fetal heart NbHH19W Homo... 371 e-101  
AA932620, AA932620 oo61h04.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 365 4e-99  
AA385594, AA385594 EST99296 Thyroid Homo sapiens cDNA 5' end 339 2e-91  
AA361957, AA361957 EST71295 T-cell lymphoma Homo sapiens cDNA... 289 2e-76  
AA383998, AA383998 EST97483 Thyroid Homo sapiens cDNA 5' end ... 274 1e-71  
H22175, H22175 yl38a03.r1 Homo sapiens cDNA clone 160492 5'. 256 3e-66  
R50060, R50060 yj59c10.r1 Homo sapiens cDNA clone 153042 5'. 256 3e-66  
AA229414, AA229414 nc47f12.r1 NCI\_CGAP\_Pr3 Homo sapiens cDNA ... 246 3e-63  
D20466, HUMGS01440 Human HL60 3'directed MboI cDNA, HUMGS014... 208 6e-52  
AA249061, AA249061 ll4438.seq.F Human fetal heart, Lambda ZAP... 168 5e-40  
R86758, R86758 yq30f07.s1 Homo sapiens cDNA clone 197317 3'. 147 2e-33  
R58025, R58025 F8018 Fetal heart Homo sapiens cDNA clone F801... 101 1e-19  
AA371076, AA371076 EST82846 Prostate gland I Homo sapiens cDN... 42 0.081  
AA977111, AA977111 oq24c03.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 40 0.32  
AA608923, AA608923 af03b04.s1 Soares testis NHT Homo sapiens ... 38 1.3

gb|AA386999|AA386999 vc81b02.r1 Ko mouse embryo 11 5dpc Mus mus... 668 0.0  
gb|AA589082|AA589082 vk24a08.r1 Knowles Solter mouse blastocyst... 658 0.0  
gb|AA510881|AA510881 vh59c11.r1 Soares mouse mammary gland NbMM... 617 e-175  
gb|AA763574|AA763574 vp07e08.r1 Soares mouse mammary gland NbMM... 615 e-174  
gb|AA387423|AA387423 vc84b03.r1 Ko mouse embryo 11 5dpc Mus mus... 549 e-155  
gb|AA915333|AA915333 vz28f05.r1 Soares 2NbMT Mus musculus cDNA ... 543 e-153  
gb|AA816208|AA816208 vp43c10.r1 Barstead mouse irradiated colon... 444 e-123  
gb|AA190043|AA190043 mt91h08.r1 Soares mouse lymph node NbMLN M... 424 e-117  
gb|AA207393|AA207393 mv89c09.r1 GuayWoodford Beier mouse kidney... 394 e-108  
emb|Z31258|MMTEST693 M.musculus expressed sequence tag MTEST693 309 8e-83  
gb|AA930143|AA930143 vz52d11.s1 Soares 2NbMT Mus musculus cDNA ... 293 5e-78  
gb|AA170612|AA170612 ms92c09.r1 Soares mouse 3NbMS Mus musculus... 287 3e-76  
gb|AA762238|AA762238 vw58h02.r1 Soares mouse mammary gland NMLM... 266 1e-69  
gb|AA689028|AA689028 vs02c12.r1 Barstead mouse irradiated colon... 264 4e-69  
gb|AA959938|AA959938 vw58h02.s1 Soares mouse mammary gland NMLM... 240 6e-62  
dbj|D18511|MUSGS01569 Mouse 3'-directed cDNA, MUSGS01569, clon... 172 1e-41  
gb|AA474393|AA474393 vd57g07.r1 Knowles Solter mouse blastocyst... 100 1e-19  
gb|W97165|W97165 mf90g05.r1 Soares mouse embryo NbME13.5 14.5 M... 74 8e-12  
gb|AA512077|AA512077 vj43f05.r1 Stratagene mouse skin (#937313)... 62 3e-08  
gb|AA794521|AA794521 vu68e07.r1 Stratagene mouse skin (#937313)... 54 8e-06  
gb|AA155454|AA155454 mn38h12.r1 Beddington mouse embryonic regi... 48 5e-04  
gb|W91000|W91000 mf83f06.r1 Soares mouse embryo NbME13.5 14.5 M... 40 0.12

gb|AA219917|AA219917 mv62f05.r1 Soares mouse 3NME12 5 Mus muscu... 38 0.45  
 gb|AA529349|AA529349 vi35f08.r1 Beddington mouse embryonic regi... 36 1.8  
 gb|AA754855|AA754855 vu51e08.r1 Soares mouse mammary gland NbMM... 36 1.8

gb|AA850379|AA850379 EST193146 Normalized rat ovary, Bento Soar... 569 e-161  
 gb|W63375|W63375 TgESTzy68g02.r1 TgME49 Tachyzoite cDNA Toxopla... 394 e-108  
 gb|AA946379|AA946379 EST201878 Normalized rat lung, Bento Soare... 353 5e-96  
 gb|AA964427|AA964427 UI-R-E1-gp-a-08-0-UI.s1 UI-R-E1 Rattus nor... 335 1e-90  
 gb|AA849599|AA849599 EST192366 Normalized rat muscle, Bento Soa... 307 3e-82  
 gb|AA849595|AA849595 EST192362 Normalized rat muscle, Bento Soa... 307 3e-82  
 gb|AA850378|AA850378 EST193145 Normalized rat ovary, Bento Soar... 278 3e-73  
 gb|AA957389|AA957389 UI-R-E1-fu-b-04-0-UI.s1 UI-R-E1 Rattus nor... 157 6e-37  
 gb|AI012981|AI012981 EST207432 Normalized rat spleen, Bento Soa... 147 6e-34  
 dbj|C48357|C48357 C.elegans cDNA clone yk469b2 : 5' end, single... 40 0.10  
 gb|AA440444|AA440444 LD15290.5prime LD Drosophila melanogaster ... 36 1.6  
 dbj|C22690|C22690 Rice cDNA, partial sequence (S5274\_4A) 36 1.6  
 gb|AA697626|AA697626 HL02895.5prime HL Drosophila melanogaster ... 36 1.6  
 gb|AA550136|AA550136 1244m3 gmbPfHB3.1. G. Roman Reddy Plasmodi... 36 1.6  
 gb|T43579|T43579 6842 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 36 1.6  
 gb|AI030501|AI030501 UI-R-C0-jc-g-02-0-UI.s1 UI-R-C0 Rattus nor... 36 1.6  
 gb|AA056876|AA056876 SWMFCA987SK Brugia malayi microfilaria cDN... 36 1.6  
 gb|AA440689|AA440689 LD15550.5prime LD Drosophila melanogaster ... 36 1.6

## SEQ ID NO:561

emb|Z47552|HSFMO3 H.sapiens mRNA for flavin-containing monooxyg... 44 0.10  
 gb|U39966|HSFMO3G7 Homo sapiens flavin containing monooxygenase... 44 0.10  
 emb|AL021026|HS127D3 Homo sapiens DNA sequence from PAC 127D3 o... 44 0.10  
 gb|U35007|CPU35007 Carcharhinus plumbeus Ig lambda light chain ... 44 0.10  
 gb|U35008|CPU35008 Carcharhinus plumbeus Ig lambda light chain ... 44 0.10  
 dbj|D85068|RICT3A Rice transposable element T3 gene and ret... 42 0.40  
 dbj|D63711|RICT3 Rice transposon T3 DNA, complete sequence 42 0.40  
 gb|U01657|U01657 Carcharhinus plumbeus Ig lambda-chain gene. co... 42 0.40  
 emb|Z92540|HS179I15A Human DNA sequence from PAC 179I15, BRCA2 ... 40 1.6  
 dbj|AB001569|AB001569 Carrot DNA for transposon Tdc1 40 1.6  
 gb|AE000613|HPAE000613 Helicobacter pylori section 91 of 134 of... 40 1.6  
 emb|X07985|DMCUT Drosophila cut locus mRNA for homeodomain-cont... 40 1.6  
 gb|AC005217|AC005217 Homo sapiens chromosome 5, P1 clone 1047D6... 40 1.6

## HUMAN ESTs

gb|AA401219|AA401219 zv63a03.r1 Soares total fetus Nb2HF8 9w Ho... 993 0.0  
 gb|H69371|H69371 yu19h09.r1 Homo sapiens cDNA clone 234305 5' s... 44 0.049  
 gb|N62576|N62576 za13d10.s1 Homo sapiens cDNA clone 292435 3' s... 42 0.19  
 gb|W77763|W77763 zd69c06.r1 Soares fetal heart NbHH19W Homo sap... 40 0.77  
 gb|R14832|R14832 yf93g05.r1 Homo sapiens cDNA clone 30203 5'. 40 0.77  
 gb|T90524|T90524 yd40a04.s1 Homo sapiens cDNA clone 110670 3' s... 38 3.0  
 gb|R91887|R91887 yq04c09.r1 Homo sapiens cDNA clone 195952 5'. 38 3.0  
 gb|AA586935|AA586935 nn68h03.s1 NCI\_CGAP\_Lar1 Homo sapiens cDNA... 38 3.0  
 gb|T46987|T46987 yb12a07.s1 Homo sapiens cDNA clone 70932 3' co... 38 3.0  
 gb|AA853975|AA853975 aj51f09.s1 Soares testis NHT Homo sapiens ... 38 3.0  
 gb|T97059|T97059 ye50e01.r1 Homo sapiens cDNA clone 121176 5'. 38 3.0  
 gb|AA883119|AA883119 am15h02.s1 Soares NFL T GBC S1 Homo sapien... 38 3.0  
 gb|AA860074|AA860074 ak45b06.s1 Soares testis NHT Homo sapiens ... 38 3.0  
 gb|AA889618|AA889618 ak28f06.s1 Soares\_testis\_NHT Homo sapiens ... 38 3.0

gb|AA230450|AA230450 mv73c06.r1 Soares mouse 3NME12 5 Mus muscu... 38 1.1  
 gb|AA058041|AA058041 mj58e08.r1 Soares mouse embryo NbME13.5 14... 38 1.1  
 gb|AA152953|AA152953 mq54a03.r1 Soares 2NbMT Mus musculus cDNA ... 38 1.1  
 gb|W34414|W34414 ma98b07.r1 Soares mouse p3NMF19.5 Mus musculus... 38 1.1  
 gb|AA465969|AA465969 ve90c06.s1 Knowles Solter mouse 2 cell Mus... 38 1.1  
 gb|AA261173|AA261173 mz62b11.r1 Soares mouse lymph node NbMLN M... 38 1.1  
 gb|AA238109|AA238109 mw97b05.r1 Soares mouse NML Mus musculus c... 38 1.1  
 dbj|C86549|C86549 Mus musculus fertilized egg cDNA 3'-end seque... 38 1.1  
 gb|AI048677|AI048677 ub29g09.r1 Soares 2NbMT Mus musculus cDNA ... 38 1.1  
 dbj|D77921|MUSC1A08 Mouse embryonal carcinoma F9 cell cDNA, C1A08 38 1.1  
 gb|AA396183|AA396183 vb45e04.r1 Soares mouse lymph node NbMLN M... 38 1.1  
 gb|AA465898|AA465898 vc62f12.s1 Knowles Solter mouse 2 cell Mus... 36 4.3  
 gb|AA041869|AA041869 mj05b12.r1 Soares mouse embryo NbME13.5 14... 36 4.3  
 gb|AA637824|AA637824 vr21f11.r1 Barstead mouse myotubes MPLRB5 ... 36 4.3  
 gb|W82563|W82563 mf05g06.r1 Soares mouse p3NMF19.5 Mus musculus... 36 4.3  
 gb|AA389972|AA389972 vb30e03.r1 Soares mouse lymph node NbMLN M... 36 4.3  
 gb|AA396253|AA396253 vb45f08.r1 Soares mouse lymph node NbMLN M... 36 4.3  
 gb|AA920907|AA920907 vy84f04.r1 Stratagene mouse macrophage (#9... 36 4.3  
 gb|AA517166|AA517166 vh98h05.r1 Barstead mouse myotubes MPLRB5 ... 36 4.3  
 gb|AA433599|AA433599 vf47a05.r1 Soares mouse NbMH Mus musculus ... 36 4.3  
 gb|AA867252|AA867252 vx25c01.r1 Soares 2NbMT Mus musculus cDNA ... 36 4.3  
 dbj|C85619|C85619 Mus musculus fertilized egg cDNA 3'-end seque... 36 4.3  
 gb|AA260277|AA260277 va93g05.r1 Soares mouse 3NME12 5 Mus muscu... 36 4.3  
 gb|AA172548|AA172548 mt04g11.r1 Soares mouse 3NbMS Mus musculus... 36 4.3  
 gb|AA266879|AA266879 mz96a02.r1 Soares mouse lymph node NbMLN M... 36 4.3  
 gb|AA473019|AA473019 vd43e06.r1 Barstead MPLRB1 Mus musculus cD... 36 4.3

gb|R47549|R47549 SW3ICA119SK *Brugia malayi* infective larva cDNA... 40 0.24  
 gb|H32651|H32651 EST107947 Rat PC-12 cells, untreated *Rattus* sp... 38 0.96  
 gb|AA955987|AA955987 UI-R-E1-fb-f-06-0-UI.s1 UI-R-E1 *Rattus* nor... 38 0.96  
 gb|AA819638|AA819638 UI-R-A0-an-f-03-0-UI.s1 UI-R-A0 *Rattus* nor... 38 0.96  
 gb|AI010914|AI010914 EST205365 Normalized rat muscle, Bento Soa... 38 0.96  
 gb|AA893199|AA893199 EST197002 Normalized rat kidney, Bento Soa... 38 0.96  
 gb|AA945176|AA945176 EST200675 Normalized rat liver, Bento Soar... 38 0.96  
 gb|R95272|R95272 SWOvL3CA167SK *Onchocerca volvulus* infective la... 36 3.8  
 gb|AA917208|AA917208 ka05f02.s1 *Onchocerca volvulus* infective l... 36 3.8  
 dbj|C62023|C62023 *C.elegans* cDNA clone yk249d5 : 5' end, single... 36 3.8  
 gb|AI013322|AI013322 EST207997 Normalized rat spleen, Bento Soa... 36 3.8  
 gb|AI043280|AI043280 TENU0920 *T. cruzi* epimastigote normalized ... 36 3.8  
 gb|AI009422|AI009422 EST203873 Normalized rat heart, Bento Soar... 36 3.8  
 gb|AI012655|AI012655 EST207106 Normalized rat placenta, Bento S... 36 3.8  
 dbj|C62878|C62878 *C.elegans* cDNA clone yk296d4 : 5' end, single... 36 3.8  
 gb|AA915818|AA915818 SWOvL3CA1269SK *Onchocerca volvulus* infecti... 36 3.8  
 gb|W00009|W00009 TgESTzy75b07.r1 TgRH Tachyzoite cDNA *Toxoplasma*... 36 3.8  
 gb|AA943503|AA943503 EST199002 Normalized rat brain, Bento Soar... 36 3.8  
 gb|AA956933|AA956933 UI-R-E1-fl-b-08-0-UI.s1 UI-R-E1 *Rattus* nor... 36 3.8  
 gb|H54977|H54977 HHU16a *Sorghum bicolor* cv. TX430 *Sorghum bicol*... 36 3.8

SEQ ID NO:562

gb|AC000112|HSAC000112 Human PAC clone DJ149P21, complete seque... 44 0.082  
 gb|U50197|CELF25E2 *Caenorhabditis elegans* cosmid F25E2. 44 0.082  
 dbj|AB007727|AB007727 *Arabidopsis thaliana* genomic DNA, chromos... 44 0.082  
 gb|U02562|BSU02562 *Bacillus subtilis* N-acetylglucosaminidase (l... 42 0.32  
 dbj|D45048|BACORFX *Bacillus subtilis* gene for beta-N-acetylgluc... 42 0.32  
 emb|Z70683|CEF13B12 *Caenorhabditis elegans* cosmid F13B12, compl... 40 1.3  
 emb|AL023828|CEY17G7B *Caenorhabditis elegans* cosmid Y17G7B, com... 40 1.3  
 gb|U39740|CELZC64 *Caenorhabditis elegans* cosmid ZC64. 40 1.3  
 gb|AF006490|AF006490 *Gossypium hirsutum* adenine nucleotide tran... 40 1.3  
 emb|AL010170|PFSC03098 *Plasmodium falciparum* DNA \*\*\* SEQUENCING... 40 1.3  
 gb|U53701|GHU53701 *Gossypium hirsutum* alcohol dehydrogenase 2d ... 40 1.3

#### HUMAN ESTs

gb|AA670455|AA670455 ae62h05.s1 Stratagene lung carcinoma 93721... 852 0.0  
 gb|AA251062|AA251062 zs07c10.r1 NCI\_CGAP GCB1 Homo sapiens cDNA... 795 0.0

gb|AA669916|AA669916 ag42h08.sl Jia bone marrow stroma Homo sap... 638 0.0  
 gb|AA300058|AA300058 EST12665 Uterus tumor I Homo sapiens cDNA ... 587 e-165  
 gb|AA664277|AA664277 ac08c05.sl Stratagene HeLa cell s3 937216 ... 549 e-154  
 gb|AA373224|AA373224 EST85230 HSC172 cells I Homo sapiens cDNA ... 529 e-148  
 gb|AA225705|AA225705 nc10b05.r1 NCI\_CGAP\_Pr1 Homo sapiens cDNA ... 515 e-144  
 gb|W27883|W27883 39b10 Human retina cDNA randomly primed sublib... 484 e-134  
 gb|R24643|R24643 yh36g05.r1 Homo sapiens cDNA clone 131864 5'. 438 e-121  
 gb|N93137|N93137 zb28h06.sl Homo sapiens cDNA clone 304955 3'. 432 e-119  
 gb|AA250933|AA250933 zs07d01.sl NCI\_CGAP\_GCB1 Homo sapiens cDNA... 426  
 e-117  
 gb|AA216370|AA216370 nc10b05.sl NCI\_CGAP\_Pr1 Homo sapiens cDNA ... 398 e-109  
 gb|H26939|H26939 yl64g01.r1 Homo sapiens cDNA clone 163056 5'. 394 e-108  
 gb|H30169|H30169 yo58g09.r1 Homo sapiens cDNA clone 182176 5'. 394 e-108  
 gb|W38854|W38854 zb28h06.r1 Soares parathyroid tumor NbHPA Homo... 359 5e-97  
 gb|AA602297|AA602297 np25a11.sl NCI\_CGAP\_Pr22 Homo sapiens cDNA... 281 1e-73  
 gb|AA167151|AA167151 zp06e09.r1 Stratagene ovarian cancer (#937... 256 6e-66  
 gb|AA172387|AA172387 zo99d03.sl Stratagene ovarian cancer (#937... 234 2e-59  
 gb|AA173748|AA173748 zo99d03.r1 Stratagene ovarian cancer (#937... 224 2e-56  
 gb|T83979|T83979 yd66a11.sl Homo sapiens cDNA clone 113180 3'. 220 3e-55  
 dbj|D61540|HUM415A08B Human fetal brain cDNA 5'-end GEN-415A08. 194 2e-47  
 gb|N45148|N45148 yv25a05.r1 Homo sapiens cDNA clone 243728 5'. 165 2e-38  
 gb|AA642960|AA642960 60f07.sl NCI\_CGAP\_Lym3 Homo sapiens cDNA... 147 4e-33  
 gb|R90980|R90980 yp93a03.r1 Homo sapiens cDNA clone 194956 5' s... 40 0.62  
 gb|AA521500|AA521500 aa73h08.sl NCI\_CGAP\_GCB1 Homo sapiens cDNA... 40 0.62  
 gb|H82921|H82921 yq46h10.sl Homo sapiens cDNA clone 198883 3' s... 40 0.62  
 gb|AA294871|AA294871 EST100023 Pancreas tumor I Homo sapiens cD... 38 2.4  
 dbj|D63191|HUM503F11B Human placenta cDNA 5'-end GEN-503F11. 38 2.4  
 gb|AA211096|AA211096 zq89g01.sl Stratagene hNT neuron (#937233)... 38 2.4

gb|AA840137|AA840137 ud01e08.r1 Soares mouse uterus NMPu Mus mu... 383 e-104  
 gb|AA145994|AA145994 mr13h04.r1 Soares mouse 3NbMS Mus musculus... 345 3e-93  
 gb|AA146365|AA146365 mr05d05.r1 Soares mouse 3NbMS Mus musculus... 236 2e-60  
 gb|AA203902|AA203902 mu60f02.r1 Soares mouse lymph node NbMLN M... 236 2e-60  
 gb|AA204516|AA204516 mu66c10.r1 Soares mouse lymph node NbMLN M... 182 2e-44  
 gb|AA137343|AA137343 mq80g08.r1 Stratagene mouse melanoma (#937... 52 6e-05  
 gb|AA174717|AA174717 ms67a01.r1 Soares mouse 3NbMS Mus musculus... 48 0.001  
 gb|W34073|W34073 ma85d10.r1 Soares mouse p3NMF19.5 Mus musculus... 48 0.001  
 gb|AA289493|AA289493 vb36b01.r1 Soares mouse lymph node NbMLN M... 48 0.001  
 gb|AA177700|AA177700 mt33e12.r1 Soares mouse 3NbMS Mus musculus... 48 0.001  
 gb|AA146021|AA146021 mr13e03.r1 Soares mouse 3NbMS Mus musculus... 48 0.001  
 gb|AA155352|AA155352 mn43d09.r1 Beddington mouse embryonic regi... 46 0.004  
 gb|AA880874|AA880874 vx33b02.r1 Stratagene mouse lung 937302 Mu... 42 0.056

gb|AA590520|AA590520 vi54b08.r1 Beddington mouse embryonic regi... 38 0.88  
 gb|AA596629|AA596629 vm56e06.r1 Stratagene mouse Tcell 937311 M... 38 0.88  
 dbj|D76657|MUS75H09 Mouse embryonal carcinoma F9 cell cDNA, 75H09 38 0.88  
 gb|AA050336|AA050336 mj12f05.r1 Soares mouse embryo NbME13.5 14... 38 0.88  
 gb|AA120196|AA120196 mn35a12.r1 Beddington mouse embryonic regi... 38 0.88  
 gb|W85267|W85267 mf42c06.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.5  
 gb|AA239372|AA239372 my38f03.r1 Barstead mouse pooled organs MP... 36 3.5  
 gb|AA497891|AA497891 vi73c07.r1 Stratagene mouse testis (#93730... 36 3.5  
 gb|AA673053|AA673053 vn45e05.r1 Barstead mouse myotubes MPLRB5 ... 36 3.5  
 emb|Z36324|MM224 M.musculus mRNA (clone 224) for expressed sequ... 36 3.5  
 gb|AI021128|AI021128 ub01f06.r1 Soares mouse mammary gland NbMM... 36 3.5  
 gb|AA403424|AA403424 mz56f07.r1 Barstead mouse pooled organs MP... 36 3.5  
 gb|W66683|W66683 me23g11.r1 Soares mouse embryo NbME13.5 14.5 M... 36 3.5  
 gb|AA689022|AA689022 vs02c03.r1 Barstead mouse irradiated colon... 36 3.5  
 gb|AA574590|AA574590 vn63h11.r1 Barstead mouse proximal colon M... 36 3.5

dbj|C90696|C90696 Dictyostelium discoideum slug cDNA, clone SSJ634 38 0.78  
 gb|AA269052|AA269052 MA1MA052.AA3 S. mansoni adult Lambda Zap S... 38 0.78  
 gb|AA998786|AA998786 UI-R-C0-im-e-11-0-UI.s1 UI-R-C0 Rattus nor... 38 0.78  
 gb|H33464|H33464 EST109494 Rat PC-12 cells, NGF-treated (9 days... 38 0.78  
 gb|AA390721|AA390721 LD09459.5prime LD Drosophila melanogaster ... 36 3.1  
 dbj|C83908|C83908 Dictyostelium discoideum slug cDNA, clone SSA567 36 3.1  
 gb|AA202425|AA202425 LD02606.5prime LD Drosophila melanogaster ... 36 3.1  
 gb|AI030951|AI030951 UI-R-C0-jf-d-04-0-UI.s1 UI-R-C0 Rattus nor... 36 3.1  
 gb|N60251|N60251 TgESTzy11d04.r1 TgRH Tachyzoite cDNA Toxoplasma... 36 3.1  
 gb|AA246875|AA246875 LD05855.5prime LD Drosophila melanogaster ... 36 3.1  
 gb|AA803682|AA803682 GM13955.5prime GM Drosophila melanogaster ... 36 3.1  
 gb|AA997528|AA997528 UI-R-C0-hw-h-11-0-UI.s1 UI-R-C0 Rattus nor... 36 3.1  
 gb|AA695197|AA695197 GM02389.5prime GM Drosophila melanogaster ... 36 3.1  
 gb|AA567339|AA567339 HL01077.5prime HL Drosophila melanogaster ... 36 3.1  
 gb|AA950648|AA950648 LD30547.5prime LD Drosophila melanogaster ... 36 3.1

SEQ ID NO:563

**substantially identical to D86956**

SEQ ID NO:564

gb|AC004505|AC004505 Homo sapiens chromosome 20, P1 clone 86C1 ... 176 1e-41  
 gb|S78798|S78798 1-phosphatidylinositol-4-phosphate 5-kinase is... 115 4e-23  
 gb|U48696|HSU48696 Human mariner-like element-containing mRNA, ... 115 4e-23  
 gb|U66300|LEU66300 Lycopersicon esculentum heat shock protein (... 115 4e-23  
 gb|AF045432|AF045432 Danio rerio stem cell leukemia protein (ta... 111 6e-22  
 emb|Z97178|BVRNAEF2 Beta vulgaris cDNA for elongation factor 2 107 9e-21  
 gb|U39066|MMU39066 Murine MAP kinase kinase 6c mRNA, complete cds. 101 6e-19  
 gb|U37573|XXU37573 Shuttle expression vector pBKCMV. 96 4e-17  
 gb|AF033097|AF033097 Avena sativa nonphototropic hypocotyl 1 (N... 90 2e-15  
 gb|AF027174|AF027174 Arabidopsis thaliana cellulose synthase ca... 86 3e-14  
 gb|U65376|CFU65376 Canis familiaris rod photoreceptor transduci... 84 1e-13  
 gb|AF033565|AF033565 Mus musculus cdc2/CDC28-like protein kinas... 82 5e-13  
 emb|Z49980|HS2AMCP H.sapiens mRNA for ets-like protein (clone 7... 82 5e-13  
 emb|AJ001103|LLARCAB Lactococcus lactis arcA and arcB genes 80 2e-12  
 gb|U52868|CFU52868 Canis familiaris retinal cyclic-GMP phosphod... 80 2e-12  
 gb|G29058|G29058 chicken STS ADL368 76 3e-11  
 gb|G29060|G29060 chicken STS ADL352 76 3e-11  
 gb|U34048|H DU34048 Haemophilus ducreyi hemoglobin-binding prote... 76 3e-11  
 gb|U44386|SLU44386 Solanum lycopersicum heat shock protein (TFH... 68 8e-09  
 gb|S83098|S83098 ribosomal protein S3 [Ambystoma mexicanum=Mexi... 66 3e-08  
 gb|U48697|HSU48697 Human mariner-like element-containing mRNA, ... 60 2e-06  
 gb|AF033096|AF033096 Avena sativa nonphototropic hypocotyl 1 (N... 60 2e-06  
 emb|X99051|LLATTMSAT L.lagopus ATT microsatellite, locus LLST1 58 8e-06  
 gb|U41811|HAU41811 Homarus americanus beta-I tubulin mRNA, comp... 46 0.029  
 emb|X99055|LLCAMSAT1 L.lagopus CA microsatellite, locus LLS D5 44 0.12  
 emb|X65215|BTMISATN B.taurus microsatellite DNA (624bp) 44 0.12  
 gb|AE001023|AE001023 Archaeoglobus fulgidus section 84 of 172 o... 42 0.46  
 emb|X80164|HSPDCM4 H.salinarium phage dcm4 Virus DNA 42 0.46  
 emb|X87859|MTCMAJ12S C.major mitochondrial gene for 12S ribosom... 42 0.46  
 emb|X87861|MTCPAL12S C.pallidus mitochondrial gene for 12S ribo... 42 0.46  
 gb|L13767|STMSEC101A Streptomyces lividans sec101 gene, 5' end p... 42 0.46  
 emb|Y08962|OSTRAMBPR O.sativa mRNA for transmembrane protein >g... 40 1.8  
 gb|S65686|S65686 {multiple cloning sites, vector} [bacteriophag... 40 1.8  
 gb|J02871|HUMCP45IV Human lung cytochrome P450 (IV subfamily) B... 40 1.8  
 dbj|D10450|HUMRTVE Human genomic DNA, retrovirus-like element 40 1.8  
 gb|S65683|S65683 {multiple cloning sites, vector} [bacteriophag... 40 1.8  
 gb|L14950|PIGALDRED Sus scrofa aldose reductase mRNA, complete ... 40 1.8  
 gb|S65693|S65693 {multiple cloning sites, vector} [bacteriophag... 40 1.8  
 gb|S65694|S65694 {multiple cloning sites, vector} [bacteriophag... 40 1.8  
 emb|AJ223292|SPA J3292 Streptococcus pyogenes SOD gene, complete... 40 1.8  
 gb|U25846|HAU25846 Homarus americanus clone LOB5 farnesoic acid... 40 1.8  
 emb|X16699|HSP450P2 Human mRNA for cytochrome P-450HP 40 1.8  
 gb|U37100|HSU37100 Homo sapiens aldose reductase-like peptide m... 40 1.8



## HUMAN ESTs

gb|AA305996|AA305996 EST177003 Jurkat T-cells VI Homo sapiens c... 942 0.0  
 gb|AA975279|AA975279 oq36e08.s1 NCI\_CGAP\_GC4 Homo sapiens cDNA ... 900 0.0  
 gb|AA426359|AA426359 zw11b02.r1 Soares NhHMPu S1 Homo sapiens c... 868 0.0  
 gb|AA424296|AA424296 zv90b08.r1 Soares NhHMPu S1 Homo sapiens c... 749 0.0  
 gb|AA632259|AA632259 np67d04.s1 NCI\_CGAP\_Br2 Homo sapiens cDNA ... 730 0.0  
 gb|H80377|H80377 yu59e01.r1 Homo sapiens cDNA clone 230424 5'. 658 0.0  
 gb|AA515175|AA515175 ng68f10.s1 NCI\_CGAP\_Lip2 Homo sapiens cDNA... 615 e-174  
 gb|AA351770|AA351770 EST59616 Infant brain Homo sapiens cDNA 5'... 611 e-172  
 gb|AA426522|AA426522 zw11b02.s1 Soares NhHMPu S1 Homo sapiens c... 587 e-165  
 gb|AA676220|AA676220 zi22a12.s1 Soares fetal liver spleen 1NFLS... 585 e-165  
 gb|R35132|R35132 yg60e09.r1 Homo sapiens cDNA clone 36874 5'. 579 e-163  
 gb|H80280|H80280 yu59e01.s1 Homo sapiens cDNA clone 230424 3'. 579 e-163  
 gb|H81145|H81145 yu60e01.r1 Homo sapiens cDNA clone 230520 5'. 561 e-157  
 gb|AA311105|AA311105 EST18187 Heart I Homo sapiens cDNA 5' end 533 e-149  
 gb|AA380530|AA380530 EST93691 Supt cells Homo sapiens cDNA 5' end 527 e-147  
 gb|H81050|H81050 yu60e01.s1 Homo sapiens cDNA clone 230520 3'. 500 e-139  
 gb|AA460005|AA460005 zx49g07.s1 Soares testis NHT Homo sapiens ... 482 e-134  
 gb|AA076450|AA076450 zm91d12.r1 Stratagene ovarian cancer (#937... 466 e-129  
 gb|N43873|N43873 yy43e09.r1 Homo sapiens cDNA clone 274024 5'. 452 e-125  
 gb|AA076451|AA076451 zm91d12.s1 Stratagene ovarian cancer (#937... 418 e-115  
 gb|AA907095|AA907095 ol03b12.s1 NCI\_CGAP\_Lu5 Homo sapiens cDNA ... 414 e-113  
 gb|W01027|W01027 za56g07.r1 Soares fetal liver spleen 1NFLS Hom... 262 1e-67  
 gb|AA127183|AA127183 zn29d11.r1 Stratagene neuroepithelium NT2R... 222 1e-55  
 gb|H65491|H65491 yr56a08.s1 Homo sapiens cDNA clone 209270 3'. 222 1e-55  
 gb|N48543|N48543 yy49d08.r1 Homo sapiens cDNA clone 276879 5'. 210 4e-52  
 gb|R32579|R32579 yh54h06.r1 Homo sapiens cDNA clone 133595 5'. 194 2e-47  
 gb|AA247827|AA247827 j0778.seq.F Human fetal heart, Lambda ZAP ... 117 5e-24  
 N84048, (many others similar, but smaller)

gb|AA589598|AA589598 vl49d08.s1 Stratagene mouse skin (#937313)... 398 e-109  
 gb|AA647465|AA647465 vq82f02.s1 Knowles Solter mouse 2 cell Mus... 385 e-105  
 gb|AA510284|AA510284 vh58f02.r1 Soares mouse mammary gland NbMM... 345 4e-93  
 gb|AA028696|AA028696 ml12e12.r1 Soares mouse p3NMF19.5 Mus musc... 307 9e-82  
 gb|N28081|N28081 MDB1409R Mouse brain, Stratagene Mus musculus ... 244 1e-62  
 gb|AA177452|AA177452 mt24c12.r1 Soares mouse 3NbMS Mus musculus... 226 3e-57  
 gb|N28080|N28080 MDB1409 Mouse brain, Stratagene Mus musculus c... 226 3e-57  
 dbj|C88310|C88310 Mus musculus fertilized egg cDNA 3'-end seque... 226 3e-57  
 gb|AA763786|AA763786 vo99g12.r1 Soares mouse mammary gland NbMM... 94 2e-17  
 gb|AA667535|AA667535 vv18b12.r1 Stratagene mouse heart (#937316... 40 0.31  
 gb|AA208274|AA208274 mv96a01.r1 GuayWoodford Beier mouse kidney... 38 1.2

gb|AA444814|AA444814 vg50e04.r1 Soares mouse mammary gland NbMM... 38 1.2  
 gb|AA763341|AA763341 vw53b12.r1 Soares mouse mammary gland NMLM... 38 1.2  
 gb|AA110827|AA110827 mp57a12.r1 Soares 2NbMT Mus musculus cDNA ... 38 1.2  
 gb|AA691932|AA691932 vt06b04.r1 Barstead mouse myotubes MPLRB5 ... 38 1.2  
 gb|W77233|W77233 me61f11.r1 Soares mouse embryo NbME13.5 14.5 M... 38 1.2  
 gb|AA072872|AA072872 mm80g08.r1 Stratagene mouse embryonic carc... 38 1.2  
 gb|AA980630|AA980630 ua43f05.r1 Soares mouse mammary gland NbMM... 36 4.9  
 gb|AA065522|AA065522 ml54d09.r1 Stratagene mouse testis (#93730... 36 4.9  
 gb|AA982398|AA982398 uh07b08.r1 Soares mouse hypothalamus NMHy ... 36 4.9  
 gb|W62610|W62610 md58c06.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.9  
 gb|AA286651|AA286651 vb79b02.r1 Soares mouse 3NME12 5 Mus muscu... 36 4.9  
 gb|AA399772|AA399772 vd70g05.r1 Beddington mouse embryonic regi... 36 4.9  
 gb|AA510475|AA510475 vg32h08.r1 Soares mouse mammary gland NbMM... 36 4.9  
 gb|AA109064|AA109064 ml63g02.r1 Stratagene mouse testis (#93730... 36 4.9  
 gb|AA033485|AA033485 mi42c08.r1 Soares mouse embryo NbME13.5 14... 36 4.9  
 gb|W57221|W57221 md59g10.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.9  
 gb|AA467106|AA467106 vd98b04.r1 Soares mouse NbMH Mus musculus ... 36 4.9  
 gb|W97470|W97470 mf95a11.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.9  
 gb|AA606917|AA606917 vm91c05.r1 Knowles Solter mouse blastocyst... 36 4.9  
 dbj|C78330|C78330 Mus musculus 3.5-dpc blastocyst cDNA 3'-end s... 36 4.9  
 gb|AA013753|AA013753 mh26h12.r1 Soares mouse placenta 4NbMP13.5... 36 4.9  
 gb|AA145240|AA145240 mrl2a03.r1 Soares mouse 3NbMS Mus musculus... 36 4.9  
 gb|AA245533|AA245533 mx03c11.r1 Soares mouse NML Mus musculus c... 36 4.9  
 gb|AA770893|AA770893 vt13a08.r1 Barstead mouse myotubes MPLRB5 ... 36 4.9  
 dbj|C79987|C79987 Mus musculus 3.5-dpc blastocyst cDNA 3'-end s... 36 4.9  
 gb|AA014027|AA014027 mh24a12.r1 Soares mouse placenta 4NbMP13.5... 36 4.9  
 dbj|C89051|C89051 Mus musculus early blastocyst cDNA, clone 01B... 36 4.9  
 gb|AA058308|AA058308 mj59e09.r1 Soares mouse embryo NbME13.5 14... 36 4.9  
 gb|AA673826|AA673826 vu08h10.r1 Barstead mouse myotubes MPLRB5 ... 36 4.9  
 gb|AA637080|AA637080 vn07h04.r1 Knowles Solter mouse blastocyst... 36 4.9  
 gb|W44292|W44292 mc80c07.r1 Soares mouse embryo NbME13.5 14.5 M... 36 4.9

gb|AA955972|AA955972 UI-R-E1-ff-d-10-0-UI.s1 UI-R-E1 Rattus nor... 159 4e-37  
 gb|AA957275|AA957275 UI-R-E1-fq-f-08-0-UI.s1 UI-R-E1 Rattus nor... 157 2e-36  
 emb|Z84031|SSZ84031 S.scrofa mRNA; expressed sequence tag (5'; ... 111 9e-23  
 gb|AF041408|AF041408 Fragaria x ananassa clone FA110b 96 5e-18  
 gb|AA933116|AA933116 SWBmL3SA048T3 Brugia malayi L3 subtracted ... 58 1e-06  
 gb|AA933363|AA933363 SWBmL3SA615T3 Brugia malayi L3 subtracted ... 52 7e-05  
 gb|AA660164|AA660164 00001 MtrHE Medicago truncatula cDNA 5' si... 50 3e-04  
 gb|N37420|N37420 18647 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 44 0.018  
 gb|H35981|H35981 14503 Lambda-PRL2 Arabidopsis thaliana cDNA cl... 44 0.018  
 gb|AA882627|AA882627 TENS0198 T. cruzi epimastigote normalized ... 44 0.018  
 gb|AI026481|AI026481 TENU0693 T. cruzi epimastigote normalized ... 42 0.070  
 gb|AA946369|AA946369 EST201868 Normalized rat lung. Bento Soare... 42 0.070

gb|AI010371|AI010371 EST204822 Normalized rat lung, Bento Soare... 42 0.070  
 gb|AI010257|AI010257 EST204708 Normalized rat lung, Bento Soare... 42 0.070  
 dbj|D39318|RICR3325A Rice cDNA, partial sequence (R3325\_1A). 40 0.28  
 gb|U40140|OSU40140 Oryza sativa clone pFDRRC22 mRNA sequence. 40 0.28  
 gb|AI009132|AI009132 EST203583 Normalized rat embryo, Bento Soa... 40 0.28  
 dbj|D47291|RICS12574A Rice cDNA, partial sequence (S12574\_1A). 40 0.28  
 dbj|D47316|RICS12613A Rice cDNA, partial sequence (S12613\_1A). 40 0.28  
 gb|T42265|T42265 5528 Lambda-PRL2 Arabidopsis thaliana cDNA clo... 40 0.28  
 dbj|D47631|RICS13239A Rice cDNA, partial sequence (S13239\_1A). 40 0.28  
 gb|AI013513|AI013513 EST208188 Normalized rat spleen, Bento Soa... 40 0.28  
 gb|AA751980|AA751980 96AS0896 Rice Immature Seed Lambda ZAPII c... 40 0.28  
 gb|AA660165|AA660165 00002 MtRHE Medicago truncatula cDNA 5' si... 40 0.28  
 emb|Z34868|ATTS3597 A. thaliana transcribed sequence; clone FAF... 40 0.28  
 dbj|D39131|RICR2302A Rice cDNA, partial sequence (R2302\_1A). 40 0.28  
 gb|AA963968|AA963968 UI-R-C0-gs-b-05-0-UI.s1 UI-R-C0 Rattus nor... 40 0.28  
 gb|AA866346|AA866346 UI-R-A0-bm-a-05-0-UI.s1 UI-R-A0 Rattus nor... 40 0.28  
 gb|AI044437|AI044437 UI-R-C1-js-e-06-0-UI.s1 UI-R-C1 Rattus nor... 40 0.28  
 dbj|D41811|RICS4634A Rice cDNA, partial sequence (S4634\_1A). 40 0.28  
 dbj|C19261|C19261 Rice cDNA, partial sequence (E10176\_1A) 40 0.28  
 dbj|D48409|RICS14588A Rice cDNA, partial sequence (S14588\_1A). 40 0.28  
 dbj|C26556|C26556 Rice cDNA, partial sequence (C12586\_1A) 40 0.28  
 dbj|D47831|RICS13548A Rice cDNA, partial sequence (S13548\_1A). 40 0.28  
 dbj|C72152|C72152 Rice cDNA, partial sequence (E1094\_3A) 40 0.28  
 dbj|D46553|RICS11305A Rice cDNA, partial sequence (S11305\_2A). 40 0.28  
 gb|AI028926|AI0289 (and many others of similar score)

SEQ ID NO:565

emb|X68308|OOLPLIP O.ovis mRNA for lipoprotein lipase 40 1.2  
 gb|AE000660|HUA000660 Homo sapiens T-cell receptor alpha delta... 40 1.2  
 emb|AL022333|HS474112 Human DNA sequence \*\*\* SEQUENCING IN PROG... 38 4.6  
 emb|Z12618|CFTRG C.fasciculata gene encoding trypanothione redu... 38 4.6  
 gb|M81651|HUMSEMIIB Human semenogelin II (SEMGII) gene, complet... 38 4.6  
 gb|M96980|HUMMYT1A Homo sapiens myelin transcription factor 1 (... 38 4.6  
 gb|U89688|ACU89688 Acanthamoeba castellanii myosin-I binding pr... 38 4.6  
 gb|AC002497|AC002497 Human Cosmid g1940a142 from 7q31.3, comple... 38 4.6  
 gb|M81652|HUMSMNGLN Homo sapiens semenogelin II mRNA, complete ... 38 4.6  
 gb|M25665|HUMNCF1A Human neutrophil cytosol factor 1 (NCF-47k) ... 38 4.6  
 gb|M73325|TRFTRPREDC Crithidia fasciculata trypanothione reduct... 38 4.6  
 gb|M73324|TRFTRPREDB Crithidia fasciculata trypanothione reduct... 38 4.6  
 emb|X92589|MMSEMIIGN M.mulatta semenogelin II gene 38 4.6  
 emb|Z47556|HSSG1SG2 H.sapiens genes for semenogelin I and semen... 38 4.6  
 gb|AC004753|AC004753 Homo sapiens chromosome 16. cosmid clone R... 38 4.6  
 gb|M55067|HUMNADPHO Human 47-kD autosomal chronic granulomatous... 38 4.6

gb|M73323|TRFTRPRED A Crithidia fasciculata trypanothione reduct... 38 4.6

# HUMAN ESTs

gb|R11942|R11942 yf54c05.r1 Homo sapiens cDNA clone 25950 5'. 656 0.0  
 gb|AA366384|AA366384 EST77326 Pancreas tumor III Homo sapiens c... 470 e-130  
 gb|T12566|T12566 CHR90086 Homo sapiens genomic clone P94\_24 5' ... 133 5e-29  
 gb|R37032|R37032 yf54c05.s1 Homo sapiens cDNA clone 25950 3'. 44 0.036  
 gb|AA661650|AA661650 nv02h12.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA261982|AA261982 zs20d03.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|AA588219|AA588219 no24c11.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA250891|AA250891 zs06c06.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|AA244177|AA244177 nc05a02.r1 NCI\_CGAP\_Pr1 Homo sapiens cDNA ... 38 2.2  
 gb|AA715147|AA715147 nv10d05.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA659887|AA659887 nv03a10.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA627890|AA627890 nq70a08.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA603596|AA603596 np27b11.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA613738|AA613738 np25h09.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA715248|AA715248 nv10h06.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AI038487|AI038487 ow25d12.x1 Soares\_parathyroid\_tumor\_NbHPA ... 38 2.2  
 gb|AA252786|AA252786 zs26f10.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|AA287819|AA287819 zs50h04.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|AA564176|AA564176 nj04c08.s1 NCI\_CGAP\_Pr21 Homo sapiens cDNA... 38 2.2  
 gb|AA643870|AA643870 np26h07.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA280371|AA280371 zt05f07.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|R00687|R00687 ye78h08.r1 Homo sapiens cDNA clone 123903 5' s... 38 2.2  
 gb|AA587820|AA587820 nj06h05.s1 NCI\_CGAP\_Pr21 Homo sapiens cDNA... 38 2.2  
 gb|AA588443|AA588443 no22c11.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA568385|AA568385 nl88f06.s1 NCI\_CGAP\_Co10 Homo sapiens cDNA... 38 2.2  
 gb|AA281831|AA281831 zt06c08.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|AA700438|AA700438 zj74b08.s1 Soares fetal liver spleen 1NFLS... 38 2.2  
 gb|AA689530|AA689530 ns66e07.r1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA688300|AA688300 nv14a09.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA687962|AA687962 nv13h04.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA526586|AA526586 ni96f11.s1 NCI\_CGAP\_Pr21 Homo sapiens cDNA... 38 2.2  
 gb|AA642589|AA642589 nq73f04.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA541594|AA541594 ni89g07.s1 NCI\_CGAP\_Pr21 Homo sapiens cDNA... 38 2.2  
 gb|AA278713|AA278713 zs76h02.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2  
 gb|T58661|T58661 ya94a07.r1 Homo sapiens cDNA clone 69300 5' si... 38 2.2  
 gb|AA689473|AA689473 ns66e07.s1 NCI\_CGAP\_Pr22 Homo sapiens cDNA... 38 2.2  
 gb|AA459023|AA459023 aa26a09.r1 NCI\_CGAP\_GCB1 Homo sapiens cDNA... 38 2.2

dbj|C76752|C76752 Mus musculus 3.5-dpc blastocyst cDNA 3'-end s... 60 2e-07  
gb|AA123048|AA123048 mn32g01.r1 Beddington mouse embryonic regi... 36 3.2  
gb|AA616529|AA616529 vo10e01.r1 Barstead mouse myotubes MPLRB5 ... 36 3.2  
gb|AA254370|AA254370 va13h09.r1 Soares mouse lymph node NbMLN M... 36 3.2  
gb|AA537288|AA537288 vk46c04.r1 Soares mouse mammary gland NbMM... 36 3.2  
gb|AA462365|AA462365 vg74c05.r1 Soares mouse NbMH Mus musculus ... 36 3.2  
gb|AA589462|AA589462 vl47g07.s1 Stratagene mouse skin (#937313)... 36 3.2  
gb|AA968017|AA968017 uh06h10.r1 Soares mouse hypothalamus NMHy ... 36 3.2

dbj|C93868|C93868 Dictyostelium discoideum slug cDNA, clone SSL809 36 2.8  
gb|AA531984|AA531984 TgESTzz46b06.r1 TgME49 invivo Bradyzoite c... 36 2.8  
gb|N60418|N60418 TgESTzy07a10.r1 TgRH Tachyzoite cDNA Toxoplasma... 36 2.8  
gb|H32045|H32045 EST106774 Rat PC-12 cells, untreated Rattus sp... 36 2.8  
gb|AA956789|AA956789 UI-R-E1-fr-h-01-0-UI.s1 UI-R-E1 Rattus nor... 36 2.8  
gb|H33275|H33275 EST109117 Rat PC-12 cells, NGF-treated (9 days... 36 2.8  
gb|AA531938|AA531938 TgESTzz45b08.r1 TgME49 invivo Bradyzoite c... 36 2.8  
dbj|D41507|RICS4044A Rice cDNA, partial sequence (S4044\_1A). 36 2.8  
gb|AA799411|AA799411 EST188908 Normalized rat heart, Bento Soar... 36 2.8  
gb|AA519671|AA519671 TgESTzz27c10.r1 TgME49 invivo Bradyzoite c... 36 2.8  
dbj|D40678|RICS2786A Rice cDNA, partial sequence (S2786\_1A). 36 2.8  
gb|AA012430|AA012430 TgESTzz22b12.r1 TgME49cDNA Toxoplasma gond... 36 2.8  
dbj|D40551|RICS2612A Rice cDNA, partial sequence (S2612\_1A). 36 2.8  
gb|AI008452|AI008452 EST202903 Normalized rat embryo, Bento Soa... 36 2.8  
dbj|D41253|RICS3620A Rice cDNA, partial sequence (S3620\_1A). 36 2.8  
gb|AA923843|AA923843 UI-R-A1-dr-f-04-0-UI.s1 UI-R-A1 Rattus nor... 36 2.8  
gb|AA799410|AA799410 EST188907 Normalized rat heart, Bento Soar... 36 2.8

We claim:

1. A method of diagnosing a disorder characterized by expression of a human cancer associated antigen precursor coded for by a nucleic acid molecule, comprising:

contacting a biological sample isolated from a subject with an agent that specifically binds to the nucleic acid molecule, an expression product thereof, or a fragment of an expression product thereof complexed with an HLA molecule, wherein the nucleic acid molecule is a NA Group 1 nucleic acid molecule, and

determining the interaction between the agent and the nucleic acid molecule or the expression product as a determination of the disorder.

2. The method of claim 1, wherein the agent is selected from the group consisting of

(a)

a nucleotide acid molecule comprising NA group 1 nucleic acid molecules

or a fragment thereof,

(b)

a nucleic acid molecule comprising NA group 3 nucleic acid molecules or a fragment thereof,

(c)

a nucleic acid molecule comprising NA group 17 nucleic acid molecules or a fragment thereof,

(d)

an antibody that binds to an expression product of NA group 1 nucleic acids,

(e)

an antibody that binds to an expression product of NA group 3 nucleic acids.

(f)

an antibody that binds to an expression product of NA group 17 nucleic acids,

5

(g)

and agent that binds to a complex of an HLA molecule and a fragment of an expression product of a NA group 1 nucleic acid,

10

(h)

an agent that binds to a complex of an HLA molecule and a fragment of an expression product of a NA group 3 nucleic acid, and

15

(I)

an agent that binds to a complex of an HLA molecule and a fragment of an expression product of a NA group 17 nucleic acid.

3. The method of claim 1, wherein the disorder is characterized by expression of a plurality of human cancer associated antigen precursors and wherein the agent is a plurality of agents, each of which is specific for a different human cancer associated antigen precursor, and wherein said plurality of agents is at least 2, at least 3, at least 4, at least 4, at least 6, at least 7, or at least 8, at least 9 or at least 10 such agents.

20

25 4.

The method of claims 1-3, wherein the agent is specific for a human cancer associated antigen precursor that is a breast, a gastric, a lung, a prostate, a renal or a colon cancer associated antigen precursor.

5.

A method for determining regression, progression or onset of a condition characterized by expression of abnormal levels of a protein encoded by a nucleic acid molecule that is a NA Group 1 molecule, comprising

30



monitoring a sample, from a patient who has or is suspected of having the condition, for a parameter selected from the group consisting of

(I)

5 the protein,

(ii)

a peptide derived from the protein,

10 (iii)

an antibody which selectively binds the protein or peptide, and

(iv)

15 cytolytic T cells specific for a complex of the peptide derived from the protein and an MHC molecule,  
as a determination of regression, progression or onset of said condition.

6. The method of claim 5, wherein the sample is a body fluid, a body effusion or a tissue.

20

7. The method of claim 5, wherein the step of monitoring comprises contacting the sample with a detectable agent selected from the group consisting of

(a)

25 an antibody which selectively binds the protein of (I), or the peptide of (ii),

(b)

a protein or peptide which binds the antibody of (iii), and

30

(c)

a cell which presents the complex of the peptide and MHC molecule of

(iv).

5

8. The method of claim 7, wherein the antibody, the protein, the peptide or the cell is labeled with a radioactive label or an enzyme.

10

9. The method of claim 5, comprising assaying the sample for the peptide.

10. The method of claim 5, wherein the nucleic acid molecule is a NA Group 3 molecule.

15

11. The method of claim 5, wherein the nucleic acid molecule is a NA Group 11 molecule.

12. The method of claim 5, wherein the nucleic acid molecule is a NA Group 12 molecule.

20

13. The method of claim 5, wherein the nucleic acid molecule is a NA Group 13 molecule.

14. The method of claim 5, wherein the nucleic acid molecule is a NA Group 14 molecule.

25

15. The method of claim 5, wherein the nucleic acid molecule is a NA Group 15 molecule.

30

16. The method of claim 5, wherein the nucleic acid molecule is a NA Group 16 molecule.

17. The method of claim 5, wherein the protein is a plurality of proteins, the parameter is a plurality of parameters, each of the plurality of parameters being specific for a different of the plurality of proteins.

5 18. A pharmaceutical preparation for a human subject comprising  
an agent which when administered to the subject enriches selectively the  
presence of complexes of an HLA molecule and a human cancer associated antigen, and  
a pharmaceutically acceptable carrier, wherein the human cancer  
associated antigen is a fragment of a human cancer associated antigen precursor encoded by a  
10 nucleic acid molecule comprises a NA Group 1 molecule.

19. The pharmaceutical preparation of claim 18, wherein the agent comprises  
a plurality of agents, each of which enriches selectively in the subject complexes of an HLA  
molecule and a different human cancer associated antigen.

15

20. The pharmaceutical preparation of claim 19, wherein the plurality is at  
least two, at least three, at least four or at least 5 different such agents.

21. The pharmaceutical preparation of claim 18, wherein the nucleic acid  
20 molecule is a NA Group 3 nucleic acid molecule.

22. The pharmaceutical preparation of claim 18, wherein the agent is selected  
from the group consisting of

(1) an isolated polypeptide comprising the human cancer associated  
25 antigen, or a functional variant thereof,

(2) an isolated nucleic acid operably linked to a promoter for expressing  
the isolated polypeptide, or functional variant thereof,

(3) a host cell expressing the isolated polypeptide, or functional variant  
thereof, and

(4) isolated complexes of the polypeptide, or functional variant thereof, and an HLA molecule.

23. The pharmaceutical preparation of claims 18-22, further comprising an  
5 adjuvant.

24. The pharmaceutical preparation of claim 18, wherein the agent is a cell expressing an isolated polypeptide comprising the human cancer associated antigen or a functional variant thereof, and wherein the cell is nonproliferative.

10 25. The pharmaceutical preparation of claim 18, wherein the agent is a cell expressing an isolated polypeptide comprising the human cancer associated antigen or a functional variant thereof, and wherein the cell expresses an HLA molecule that binds the polypeptide.

15 26. The pharmaceutical preparation of claim 18, wherein the agent is at least two, at least three, at least four or at least five different polypeptides, each coding for a different human cancer associated antigen or functional variant thereof.

20 27. The pharmaceutical preparation of claim 18, wherein the agent is a PP Group 2 polypeptide.

28. The pharmaceutical preparation of claim 18, wherein the agent is a PP Group 3 polypeptide or a PP Group 4 polypeptide.

25 29. The pharmaceutical preparation of claim 25, wherein the cell expresses one or both of the polypeptide and HLA molecule recombinantly.

30 30. The pharmaceutical preparation of claim 25, wherein the cell is nonproliferative.

31. A composition comprising  
an isolated agent that binds selectively a PP Group 1 polypeptide.

32. The composition of matter of claim 31, wherein the agent binds selectively  
5 a PP Group 3 polypeptide.

33. The composition of matter of claim 31, wherein the agent binds selectively  
a PP Group 11 polypeptide.

10 34. The composition of matter of claim 31, wherein the agent binds selectively  
a PP Group 12 polypeptide.

35. The composition of matter of claim 31, wherein the agent binds selectively  
a PP Group 13 polypeptide.

15 36. The composition of matter of claim 31, wherein the agent binds selectively  
a PP Group 14 polypeptide.

37. The composition of matter of claim 31, wherein the agent binds selectively  
20 a PP Group 15 polypeptide.

38. The composition of matter of claim 31, wherein the agent binds selectively  
a PP Group 16 polypeptide.

25 39. The composition of claims 31-38, wherein the agent is a plurality of  
different agents that bind selectively at least two, at least three, at least four, or at least five  
different such polypeptides.

40. The composition of claims 31-38, wherein the agent is an antibody.

30

41. The composition of claim 39, wherein the agent is an antibody.

42. A composition of matter comprising  
a conjugate of the agent of claims 31-41 and a therapeutic or diagnostic  
5 agent.

43. The composition of matter of claim 42, wherein the conjugate is of the  
agent and a therapeutic or diagnostic that is a toxin.

10 44. A pharmaceutical composition comprising an isolated nucleic acid  
molecule selected from the group consisting of:

(1)

NA Group 1 molecules, and

15 (2)

NA Group 2 molecules, and a pharmaceutically acceptable carrier.

45. The pharmaceutical composition of claim 44, wherein the isolated nucleic  
acid molecule comprises a NA Group 3 or NA Group 4 molecule.

20 46. The pharmaceutical composition of claim 44, wherein the isolated nucleic  
acid molecule comprises at least two isolated nucleic acid molecules coding for two different  
polypeptides, each polypeptide comprising a different human cancer associated antigen.

25 47. The pharmaceutical composition of claims 44-46 further comprising an  
expression vector with a promoter operably linked to the isolated nucleic acid molecule.

48. The pharmaceutical composition of claims 44-46 further comprising a host  
cell recombinantly expressing the isolated nucleic acid molecule.

30

49. A pharmaceutical composition comprising  
an isolated polypeptide comprising a PP Group 1 or a PP Group 2  
polypeptide, and  
a pharmaceutically acceptable carrier.

5

50. The pharmaceutical composition of claim 49, wherein the isolated  
polypeptide comprises a PP Group 3 or a PP Group 4 polypeptide.

10 51. The pharmaceutical composition of claim 49, wherein the isolated  
polypeptide comprises at least two different polypeptides, each comprising a different human  
cancer associated antigen.

52. The pharmaceutical composition of claim 49, wherein the isolated  
15 polypeptides are PP Group 11 polypeptides or HLA binding fragments thereof.

53. The pharmaceutical composition of claim 49, wherein the isolated  
polypeptides are PP  
Group 12 polypeptides or HLA binding fragments thereof.

20

54. The pharmaceutical composition of claim 49, wherein the isolated  
polypeptides are PP Group 13 polypeptides or HLA binding fragments thereof.

55. The pharmaceutical composition of claim 49, wherein the isolated  
25 polypeptides are PP Group 14 polypeptides or HLA binding fragments thereof.

56. The pharmaceutical composition of claim 49, wherein the isolated  
polypeptides are PP Group 15 polypeptides or HLA binding fragments thereof.

30

57. The pharmaceutical composition of claim 49, wherein the isolated polypeptides are PP Group 16 polypeptides or HLA binding fragments thereof.

58. The pharmaceutical composition of claims 49-57, further comprising an  
5 adjuvant.

59. An isolated nucleic acid molecule comprising a NA Group 3 molecule.

60. An isolated nucleic acid molecule comprising a NA Group 4 molecule.

10 61. The isolated nucleic acid molecule of claims 59-60, wherein the molecule is a Group 11 molecule or a fragment thereof.

62. The isolated nucleic acid molecule of claims 59-60, wherein the molecule  
15 is a Group 12 molecule or a fragment thereof.

63. The isolated nucleic acid molecule of claims 59-60, wherein the molecule is a Group 13 molecule or a fragment thereof.

20 64. The isolated nucleic acid molecule of claims 59-60, wherein the molecule is a Group 14 molecule or a fragment thereof.

65. The isolated nucleic acid molecule of claims 59-60, wherein the molecule is a Group 15 molecule or a fragment thereof.

25 66. The isolated nucleic acid molecule of claims 59-60, wherein the molecule is a Group 16 molecule or a fragment thereof.

67. An isolated nucleic acid molecule selected from the group consisting of



(a)

a fragment of a nucleic acid selected from the group of nucleic acid  
consisting of SEQ ID NOs presenting nucleic acid sequences among SEQ ID NOs. 1-816, of  
5 sufficient length to represent a sequence unique within the human genome, and identifying a  
nucleic acid encoding a human cancer associated antigen precursor,

(b)

complements of (a),

10

provided that the fragment includes a sequence of contiguous nucleotides  
which is not identical to any sequence selected from the sequence group consisting of

(1) sequences having the GenBank accession numbers of Table 1

(correct?),

15

(2) complements of (1), and

(3) fragments of (1) and (2).

68. The isolated nucleic acid molecule of claim 67, wherein the sequence of  
contiguous nucleotides is selected from the group consisting of:

20

(1)

at least two contiguous nucleotides nonidentical to the sequence group,

(2)

at least three contiguous nucleotides nonidentical to the sequence group,

(3)

25

at least four contiguous nucleotides nonidentical to the sequence group,

(4)

at least five contiguous nucleotides nonidentical to the sequence group,

(5)

30

at least six contiguous nucleotides nonidentical to the sequence group,

(6)

at least seven contiguous nucleotides nonidentical to the sequence group.

69. The isolated nucleic acid molecule of claim 67, wherein the fragment has a size selected from the group consisting of at least: 8 nucleotides, 10 nucleotides, 12 nucleotides, 14 nucleotides, 16 nucleotides, 18 nucleotides, 20, nucleotides, 22 nucleotides, 24 nucleotides, 26 nucleotides, 28 nucleotides, 30 nucleotides, 50 nucleotides, 75 nucleotides, 100 nucleotides, and 200 nucleotides.

70. The isolated nucleic acid molecule of claim 67, wherein the molecule encodes a polypeptide which, or a fragment of which, binds a human HLA receptor or a human antibody.

71. An expression vector comprising an isolated nucleic acid molecule of claims 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69 or 70 operably linked to a promoter.

72. An expression vector comprising a nucleic acid operably linked to a promoter, wherein the nucleic acid is a NA Group 2 molecule.

73. An expression vector comprising a NA Group 1 or Group 2 molecule and a nucleic acid encoding an HLA molecule.

74. A host cell transformed or transfected with an expression vector of claims 71, 72, or 73.

75. A host cell transformed or transfected with an expression vector of claim 71 or claim 72 and further comprising a nucleic acid encoding HLA.

76. An isolated polypeptide encoded by the isolated nucleic acid molecule of claims 59, 60, 61, 62, 63, 64, 65, or 66.

77. A fragment of the polypeptide of claim 76 which is immunogenic.

78. The fragment of claim 77, wherein the fragment, or a portion of the fragment, binds HLA or a human antibody.

5

79. An isolated fragment of a human cancer associated antigen precursor which, or portion of which, binds HLA or a human antibody, wherein the precursor is encoded by a nucleic acid molecule that is a NA Group 1 molecule.

10 80. The fragment of claim 79, wherein the fragment is part of a complex with HLA.

81. The fragment of claim 79, wherein the fragment is between 8 and 12 amino acids in length.

15

82. An isolated polypeptide comprising a fragment of the polypeptide of claim 76 of sufficient length to represent a sequence unique within the human genome and identifying a polypeptide that is a human cancer associated antigen precursor.

20 83. A kit for detecting the presence of the expression of a human cancer associated antigen precursor comprising  
a pair of isolated nucleic acid molecules each of which consists essentially  
of a molecule selected from the group consisting of

25 (a) a 12-32 nucleotide contiguous segment of the nucleotide sequence of any of the NA Group 1 molecules and

(b) complements of ("a"), wherein the contiguous segments are nonoverlapping.

30

84. The kit of claim 83, wherein the pair of isolated nucleic acid molecules is constructed and arranged to selectively amplify an isolated nucleic acid molecule that is a NA Group 3 molecule.

5 85. A method for treating a subject with a disorder characterized by expression of a human cancer associated antigen precursor, comprising administering to the subject an amount of an agent, which enriches selectively in the subject the presence of complexes of an HLA molecule and a human cancer associated antigen, effective to ameliorate the disorder, wherein the human cancer associated  
10 antigen is a fragment of a human cancer associated antigen precursor encoded by a nucleic acid molecule selected from the group consisting of

(a)

a nucleic acid molecule comprising NA group 1 nucleic acid molecules.

15

(b)

a nucleic acid molecule comprising NA group 3 nucleic acid molecules,

(c)

20

a nucleic acid molecule comprising NA group 17 nucleic acid molecules.

86. The method of claim 85, wherein the disorder is characterized by expression of a plurality of human cancer associated antigen precursors and wherein the agent is a plurality of agents, each of which enriches selectively in the subject the presence of complexes  
25 of an HLA molecule and a different human cancer associated antigen.

87. The method of claim 86, wherein the plurality is at least 2, at least 3, at least 4, or at least 5 such agents.

88. The method of claims 85-87, wherein the agent is an isolated polypeptide selected from the group consisting of PP Group 1, PP Group 2, PP Group 3, PP Group 4, PP Group 5, PP Group 6, PP Group 7, PP Group 8, PP Group 9, PP Group 10, PP Group 11, PP Group 12, PP Group 13, PP Group 14, PP Group 15, PP Group 16 and PP Group 17 polypeptides.

89. The method of claims 85-88, wherein the disorder is cancer.

90. A method for treating a subject having a condition characterized by expression of a human cancer associated antigen precursor in cells of the subject, comprising:

(I)

removing an immunoreactive cell containing sample from the subject,

(ii)

contacting the immunoreactive cell containing sample to the host cell under conditions favoring production of cytolytic T cells against a human cancer associated antigen which is a fragment of the precursor,

(iii)

introducing the cytolytic T cells to the subject in an amount effective to lyse cells which express the human cancer associated antigen, wherein the host cell is transformed or transfected with an expression vector comprising an isolated nucleic acid molecule operably linked to a promoter, the isolated nucleic acid molecule being selected from the group of nucleic acid molecules consisting of NA Group 1, NA Group 2, NA Group 3, NA Group 4, NA Group 5, NA Group 6, NA Group 7, NA Group 8, NA Group 9, NA Group 10, NA Group 11, NA Group 12, NA Group 13, NA Group 14, NA Group 15, NA Group 16, and NA Group 17.

91. The method of claim 90, wherein the host cell recombinantly expresses an HLA molecule which binds the human cancer associated antigen.

92. The method of claim 90, wherein the host cell endogenously expresses an  
5 HLA molecule which binds the human cancer associated antigen.

93. A method for treating a subject having a condition characterized by expression of a human cancer associated antigen precursor in cells of the subject, comprising:

10 (I)  
identifying a nucleic acid molecule expressed by the cells associated with said condition, wherein said nucleic acid molecule is a NA Group 1 molecule

(ii)  
15 transfecting a host cell with a nucleic acid selected from the group consisting of

(a) the nucleic acid molecule identified,  
20

(b)  
a fragment of the nucleic acid identified which includes a segment coding  
for a human cancer associated antigen,  
25

(c)  
deletions, substitutions or additions to (a) or (b), and  
30

(d)  
degenerates of (a), (b), or (c);

(iii)  
5 culturing said transfected host cells to express the transfected nucleic acid  
molecule, and;

(iv)  
introducing an amount of said host cells or an extract thereof to the subject  
10 effective to increase an immune response against the cells of the subject associated with the  
condition.

94. The method of claim 93, further comprising:

15 (a)  
identifying an MHC molecule which presents a portion of an expression  
product of the nucleic acid molecule,

20 wherein the host cell expresses the same MHC molecule as identified in  
(a) and wherein the host cell presents an MHC binding portion of the expression product of the  
nucleic acid molecule.

95. The method of claim 93, wherein the immune response comprises a B-cell  
25 response or a T cell response.

96. The method of claim 95, wherein the response is a T-cell response which  
comprises generation of cytolytic T-cells specific for the host cells presenting the portion of the  
expression product of the nucleic acid molecule or cells of the subject expressing the human  
30 cancer associated antigen.

97. The method of claim 93, wherein the nucleic acid molecule is a NA Group 3 molecule.

98. The method of claims 93 or 94, further comprising treating the host cells  
5 to render them non-proliferative.

99. A method for treating or diagnosing or monitoring a subject having a condition characterized by expression of an abnormal amount of a protein encoded by a nucleic acid molecule that is a NA Group 1 molecule, comprising  
10 administering to the subject an antibody which specifically binds to the protein or a peptide derived therefrom, the antibody being coupled to a therapeutically useful agent, in an amount effective to treat the condition.

100. The method of claim 99, wherein the antibody is a monoclonal antibody.  
15

101. The method of claim 100, wherein the monoclonal antibody is a chimeric antibody or a humanized antibody.

102. A method for treating a condition characterized by expression in a subject  
20 of abnormal amounts of a protein encoded by a nucleic acid molecule that is a NA Group 1 nucleic acid molecule, comprising administering to a subject a pharmaceutical composition of any one of claims 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 47, and 58 in an amount effective to prevent, delay the onset of, or inhibit the condition in  
25 the subject.

103. The method of claim 102, wherein the condition is cancer.

104. The method of claims 102-103, further comprising first identifying that  
30 the subject expresses in a tissue abnormal amounts of the protein.



105. A method for treating a subject having a condition characterized by expression of abnormal amounts of a protein encoded by a nucleic acid molecule that is a NA Group 1 nucleic acid molecule, comprising

(I) identifying cells from the subject which express abnormal amounts of  
5 the protein;  
(ii) isolating a sample of the cells;  
(iii) cultivating the cells, and  
(iv) introducing the cells to the subject in an amount effective to provoke  
an immune response against the cells.

10 106. The method of claim 105, wherein the cells express a protein selected from the group consisting of a PP Group 11 protein, a PP Group 12 protein, a PP Group 13 protein, PP Group 14 protein, a PP Group 15 protein and a PP Group 16 protein.

15 107. The method of claim 105, further comprising rendering the cells non-proliferative, prior to introducing them to the subject.

20 108. A method for treating a pathological cell condition characterized by aberrant expression of a protein encoded by a nucleic acid molecule that is a NA Group 1 nucleic acid molecule, comprising

administering to a subject in need thereof an effective amount of an agent which inhibits the expression or activity of the protein.

25 109. The method of claim 108, wherein the agent is an inhibiting antibody which selectively binds to the protein and wherein the antibody is a monoclonal antibody, a chimeric antibody or a humanized antibody.

30 110. The method of claim 108, wherein the agent is an antisense nucleic acid molecule which selectively binds to the nucleic acid molecule which encodes the protein.

111. The method of claim 108, wherein the nucleic acid molecule is a NA Group 3 nucleic acid molecule.

112. A composition of matter useful in stimulating an immune response to a plurality of a protein encoded by nucleic acid molecules that are NA Group 1 molecules, comprising

a plurality of peptides derived from the amino acid sequences of the proteins, wherein the peptides bind to one or more MHC molecules presented on the surface of the cells which express an abnormal amount of the protein.

113. The composition of matter of claim 112, wherein at least a portion of the plurality of peptides bind to MHC molecules and elicit a cytolytic response thereto.

114. The composition of matter of claim 113, further comprising an adjuvant.

115. The composition of matter of claim 114, wherein said adjuvant is a saponin, GM-CSF, or an interleukin.

116. An isolated antibody which selectively binds to a complex of:

(i)

a peptide derived from a protein encoded by a nucleic acid molecule that is a NA Group 1 molecule and

(ii)

and an MHC molecule to which binds the peptide to form the complex, wherein the isolated antibody does not bind to (i) or (ii) alone.

117. The antibody of claim 116, wherein the antibody is a monoclonal antibody, a chimeric antibody or a humanized antibody.

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DXS8237E DLPKLASDDRPSPPRGLVAAYSGESDSEE.....EQERGGPEREEKLTDWQKLACLLCRRQFPPSKEAL 233

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DXS8237E SDNIGSRMLQAMGWKEGSGGLGRKKQGI VTP IEAQTRVRGSLGARGSSYGV TSTESYKETLHKTMVTRFNEAQ 389

Fig. 1

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Fig. 2

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Fig. 2 (CONTINUED)

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Fig. 2 (CONTINUED)

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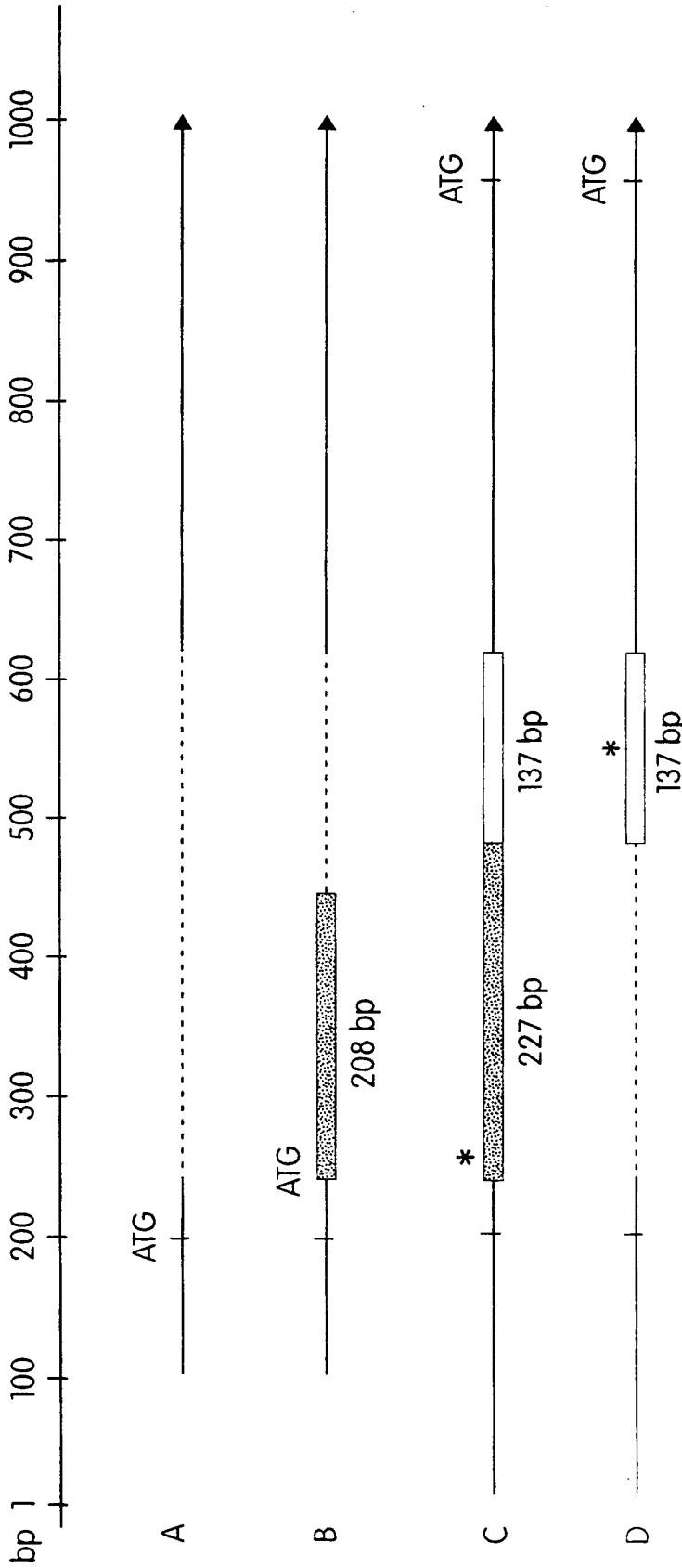
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1101 AAGACAGTCCAACGAGACTTATCGAGATGCTGTTCTCGAAGACTCATCTTTGCTCGATATAAAGAACTCGATTAAAGAAAGGAGACAAGTTCCCATGGGATACA 3500  
R Q S N E T Y R D A V K R V M F A R Y K E L D \*\*\*

ACCTCCCTCTGTTTGTGTCCTCTCTCTTTTGTGTTACTGTTCTGCTGCTAGAACTTTTAAATAAACTTGTTCATGTGTATATAAAAAA 3599

Fig. 2 (CONTINUED)

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TRANSCRIPT VARIANT B

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145  
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[GTGAGCCACCGACCTGCCATTTGGCAATCTGCAAGATTTATTATTAAATGCAACAGATGTTCTCATTCATTGTTCTGAGCTTGGAGTCCCAATGAAAATTTAGTGGGAGC 360 (152)]

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Q E E R F A P G W...

Fig. 3A



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227bp exon:

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Fig. 3B

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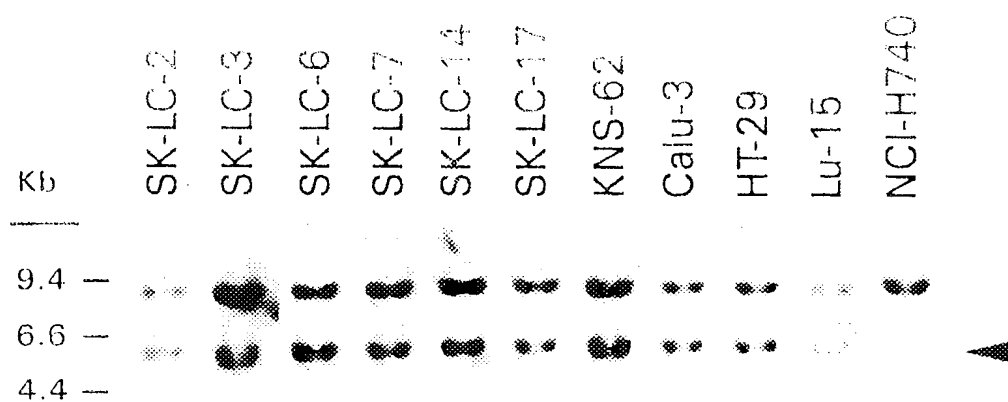


Fig. 4

SUBSTITUTE SHEET (RULE 26)

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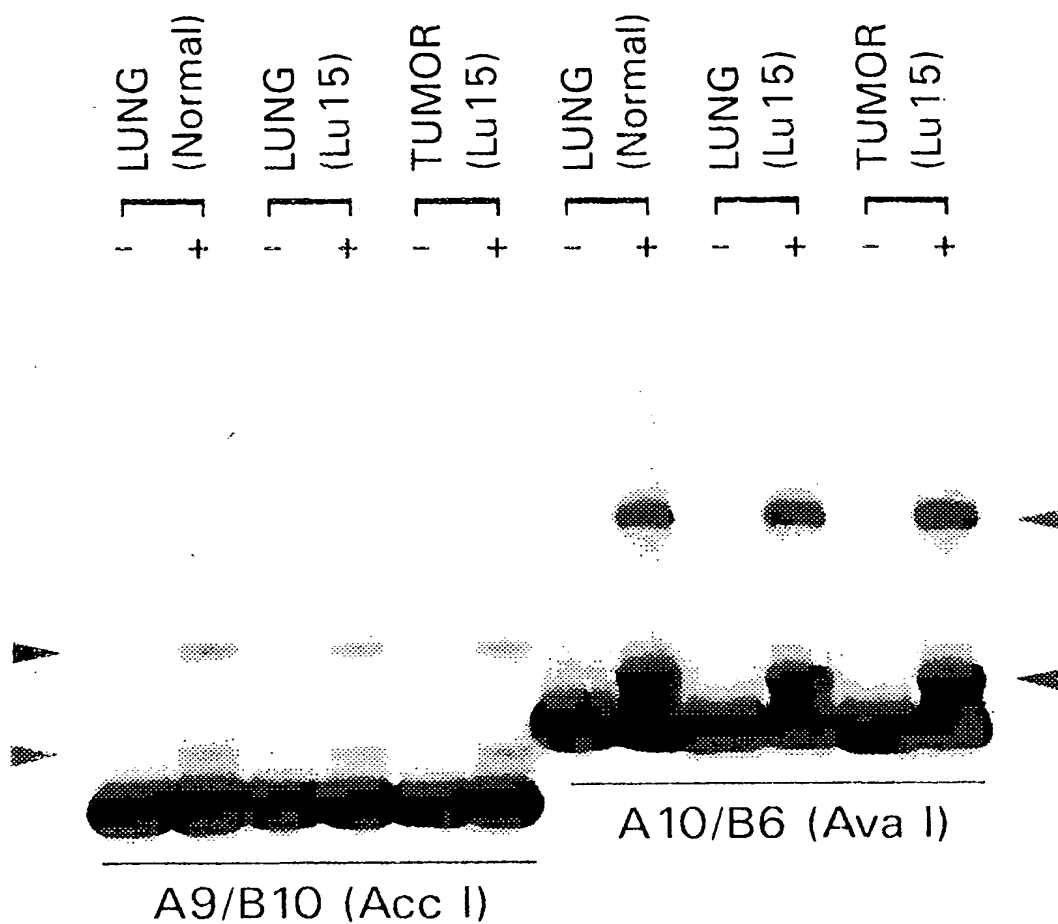


Fig. 5

SUBSTITUTE SHEET (RULE 26)

## SEQUENCE LISTING

<110> Ludwig Institute for Cancer Research  
Old, Lloyd J.  
Scanlan, Matthew J.  
Stockert, Elisabeth  
Gure, Ali  
Chen, Yao-Tseng  
Gout, Ivan  
O'Hare, Michael  
Obata, Yuichi  
Pfreundschuh, Michael  
Tureci, Ozlem  
Sahin, Ugur

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POLYPEPTIDES

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<150> U.S. 60/061,599

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<150> U.S. 08/948,705

<151> 1997-10-10

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 374

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 26

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&lt;211&gt; 502

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 28

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&lt;211&gt; 537

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 29

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&lt;210&gt; 30

&lt;211&gt; 3872

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 30

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&lt;211&gt; 655

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 31

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens



&lt;400&gt; 32

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&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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<400> 37  
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 tttattcctt ccggtgggtt cgcggtctag ctgaccaaga acggaactgg ggactttcgc 120  
 agtgagagtt acagctctta aagatggcac cgaccaggc cgggcgcggt ggctcaggcc 180  
 tgcaatccca gcactttggg aggcggaggc aggtgaatca cgaggtcagg aaatcgagac 240  
 catcctggct aacatgggtga aaccccgctc ccactaaaaa tacaaaaaat tagccaggca 300  
 tgggtggctgg cacctgtagt cccagctact tgggaggctg agccaggaaa gtggcatgaa 360  
 cccgcgaggc agagcttgca ataagccgag atcgtgccaa tgcactccag cctgggcaac 420  
 agaaggagac actgtctcaa aaa 443

<210> 38  
 <211> 442  
 <212> DNA  
 <213> Homo Sapiens

<400> 38  
 ctgcctcgg agcagccatg atggaaggcc tggacgacgg cccggacttc ctctcagaag 60  
 aggaccgagg acttaaagca ataaatgtag atcttcaaag tgatgctgct ctgcagggtg 120  
 acattttctga tgctcttagt gagcgggata aagtaaaatt cactgttcac acaaagattc 180  
 caccagcacc accaagacct gattttgatg cttcaaggga aaaactacag aagcttgggtg 240  
 aaggagaagg gtcaatgacg aaggaagaat tcacaaagat gaaacaggaa ctggaagctg 300  
 aatatttggc aatattcaag aagacagttg cgatgcatga agtggtcctg tgtcgtgtgg 360  
 cagcacatcc tattttgaga agagatttaa atttccatgt cttcttggaa tataatcaag 420  
 atttgagtgt gcgaggaaaa aa 442

<210> 39  
 <211> 692  
 <212> DNA  
 <213> Homo Sapiens

<400> 39

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cagggacagg ccctatctta ttttttttcc catcttcatc atccacttct gcttacagtt      60
tgctgcttac aataacttaa tgatggattg agttatctgg gtgggtctcta gccatctggg      120
cagtgtgggt ctgtctaacc aaagggcatt ggccctcaaac cctgcatttg gtttaggggc      180
taacagagct cctcagataa tcttcacaca catgtaactg ctggagatct tattctatta      240
tgaataagaa acgagaagtt tttccaaagt gttagtcagg atctgaaggc tgtcattcag      300
ataaccagc ttttcctttt ggcttttagc ccattcagac tttgccagag tcaagccaag      360
gattgctttt ttgctacagt tttctgccaa atggcctagt tctgagtag ctggaaacca      420
gagagaaaga ggatccagga tgtacttggg tgaggaggcc tggcttatct aggaagtcgt      480
gtctgggggtg cttattgctg ctccatacag ctgtacgtca gccccttggc cttctctgta      540
ggttcttggc ancaatgagc agctttcact caagtgcacac aagtaattac tgagtcctaa      600
tttgatagcc accaactgta cctgggtang caaagtcaga tttttgagaa nctttttcct      660
gatttgaagt tttaattacc ttaatttctt tt                                     692

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&lt;210&gt; 40

&lt;211&gt; 619

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 40

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gaggcaccag attctgctga ggggaccacc cttacagtgc tgccctgaagg tgaggagtgt      60
cccctgtgtg tgagtgaag caatggcctg gagctccac cctcagcagc atctgatgag      120
ccacttcagg agccactgga ggctgacagg acctcggaag agctgacaga ggccaagacc      180
ccaacctcca gccagagaaa gccacaggaa ctggttacag ctgaggttg agctccatcc      240
acctcatctt cagccacttc ctgcctgag ggctcctcac ctgcccagacc tctcggcgt      300
cgcaccagtg ctgatgtgga aattaggggt caagggactg gtcggccagg acaaccacca      360
ggcccaaaag tgcttcgaaa gctgccagga cggctggtaa ctgtggtaga ggaaaaggaa      420
ctggtgcggc ggcggcggca gcagcgggga gctgccaanc accctagtgc ctgggggtctc      480
tgagactagt gccagcccgg gaagcccgtc tgtccgcagc atgtcanggc canaatcctc      540
ccctcccatg ggtgggccct gtgaaagctg ctccttcatc cncactgcnc actccanccc      600
agnagccctt cattgcncg                                     619

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&lt;210&gt; 41

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 41

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Pro Glu Ser Lys Pro Ile Met Thr Ser Ser Glu Ala Phe Glu Pro Pro
1      5      10      15
Lys Tyr Leu Met Leu Gly Gln Gln Ala Val Gly Gly Val Pro Ile Gln
20     25     30
Pro Ser Val Arg Thr Gln Met Trp Leu Thr Glu Gln Leu Arg Thr Asn
35     40     45
Pro Leu Glu Gly Arg Asn Thr Glu Asp Ser Tyr Ser Leu Ala Pro Trp
50     55     60
Gln Gln Gln Gln Ile Glu Phe Arg Gln Gly Ser Glu Thr Pro Met Gln
65     70     75     80
Val Leu Thr Gly Ser Ser Arg Gln Ser Tyr Ser Pro Gly Tyr Gln Asp
85     90     95
Phe Ser Lys Trp Glu Ser Met Leu Lys Lys Glu Gly Leu Leu Arg Gln
100    105    110
Lys Glu Ile Val Asp Arg Gln Lys Gln Ile Thr His Leu Ile Arg Asp
115    120    125
Asn Glu Leu Pro Ala His Ala Met Leu Gly His Tyr Val Asn Cys Glu
130    135    140

```

Asp Ser Tyr Val Ala Ser Leu His His  
145 150

<210> 42  
<211> 95  
<212> PRT  
<213> Homo Sapiens

<400> 42  
Ile Leu Leu Glu Phe Tyr Leu Trp Gln Ile Gly Arg Tyr Ile Phe Val  
1 5 10 15  
His Val Asn Asn His Ile Tyr Ile Lys Leu Tyr Asn Cys Thr Phe Leu  
20 25 30  
Thr Ala Leu Ser Gln Val Ala Leu Ser Phe Pro Ser Ile Asn Gly Leu  
35 40 45  
Ile Phe Val Ser Phe Ala Phe Phe Arg Val Val Asn Ser Tyr Cys Pro  
50 55 60  
Leu Gln Phe Val Gln Phe Leu Arg Cys Leu Leu Leu Leu Lys Arg Met  
65 70 75 80  
Leu Gly Glu Phe Ile Phe His Lys Glu Met Glu His Tyr Leu Lys  
85 90 95

<210> 43  
<211> 114  
<212> PRT  
<213> Homo Sapiens

<400> 43  
Ser Lys Leu Leu Ser Gly Thr Ala Asp Gly Ala Asp Leu Arg Thr  
1 5 10 15  
Val Asp Pro Glu Thr Gln Ala Arg Leu Glu Ala Leu Leu Glu Ala Ala  
20 25 30  
Gly Ile Gly Lys Leu Ser Thr Ala Asp Gly Lys Ala Phe Ala Asp Pro  
35 40 45  
Glu Val Leu Arg Arg Leu Thr Ser Ser Val Ser Cys Ala Leu Asp Glu  
50 55 60  
Ala Ala Ala Leu Thr Arg Met Arg Ala Glu Ser Thr Ala Asn Ala Gly  
65 70 75 80  
Gln Ser Asp Asn Arg Ser Leu Ala Glu Ala Cys Ser Gly Asp Val Ala  
85 90 95  
Val Arg Lys Leu Leu Ile Glu Gly Arg Ser Val Phe Glu Leu Pro Glu  
100 105 110  
Glu Gly

<210> 44  
<211> 132  
<212> PRT  
<213> Homo Sapiens

<400> 44  
Gly Glu Lys Glu Gln Asp Lys Pro Pro Asn Leu Val Leu Lys Asp Lys  
1 5 10 15  
Val Lys Pro Lys Gln Asp Thr Lys Tyr Asp Leu Ile Leu Asp Glu Gln  
20 25 30

Ala Glu Asp Ser Lys Ser Ser His Ser His Thr Ser Lys His Lys Lys  
 35 40 45  
 Lys Thr His His Cys Ser Glu Lys Glu Asp Glu Asp Tyr Met Pro  
 50 55 60  
 Ile Lys Asn Thr Asn Gln Asp Ile Tyr Arg Glu Met Gly Phe Gly His  
 65 70 75 80  
 Tyr Glu Glu Glu Glu Ser Cys Trp Glu Lys Gln Lys Ser Glu Lys Arg  
 85 90 95  
 Asp Arg Thr Gln Asn Arg Ser Arg Ser Arg Ser Arg Glu Arg Asp Gly  
 100 105 110  
 His Tyr Ser Asn Ser His Lys Ser Lys Tyr Gln Thr Asp Leu Tyr Glu  
 115 120 125  
 Arg Glu Arg Ser  
 130

<210> 45  
 <211> 214  
 <212> PRT  
 <213> Homo Sapiens

<400> 45  
 Lys Thr Gln Glu Lys Pro Pro Lys Glu Leu Val Asn Glu Trp Ser Leu  
 1 5 10 15  
 Lys Ile Arg Lys Glu Met Arg Val Val Asp Arg Gln Ile Arg Asp Ile  
 20 25 30  
 Gln Arg Glu Glu Glu Lys Val Lys Arg Ser Val Lys Asp Ala Ala Lys  
 35 40 45  
 Lys Gly Gln Lys Asp Val Cys Ile Val Leu Ala Lys Glu Met Ile Arg  
 50 55 60  
 Ser Arg Lys Ala Val Ser Lys Leu Ala Ser Lys Ala His Met Asn Ser  
 65 70 75 80  
 Val Leu Met Gly Met Lys Asn Gln Leu Ala Val Leu Arg Val Ala Gly  
 85 90 95  
 Ser Leu Gln Lys Ser Thr Glu Val Met Lys Ala Met Gln Ser Leu Val  
 100 105 110  
 Lys Ile Pro Glu Ile Gln Ala Thr Met Arg Glu Leu Ser Lys Glu Met  
 115 120 125  
 Met Lys Ala Gly Ile Ile Glu Glu Met Leu Glu Asp Thr Phe Glu Ser  
 130 135 140  
 Met Asp Asp Gln Glu Glu Met Glu Glu Glu Ala Glu Met Glu Ile Asp  
 145 150 155 160  
 Arg Ile Leu Phe Glu Ile Thr Ala Gly Ala Leu Gly Lys Ala Pro Ser  
 165 170 175  
 Lys Val Thr Asp Ala Leu Pro Glu Pro Glu Pro Pro Gly Ala Met Ala  
 180 185 190  
 Ala Ser Glu Asp Glu Glu Glu Glu Glu Leu Glu Ala Met Gln Ser  
 195 200 205  
 Arg Leu Ala Thr Arg Ser  
 210

<210> 46  
 <211> 248  
 <212> PRT  
 <213> Homo Sapiens

&lt;400&gt; 46

Gly Ser Arg Glu Glu Thr Leu Ala Phe Val Pro Leu Leu Arg Leu Leu  
 1 5 10 15  
 Glu Ala Thr Leu Ser Pro Gly Arg Ala Phe Cys Ser Pro Ile Ser Ser  
 20 25 30  
 Lys Ile Gln Pro Ala Gln Val Ala Gly His Glu Leu Cys Ser Gly Ser  
 35 40 45  
 Trp Asn Leu Thr Leu Val Ala Ser Gly Pro Val Ser Met Ala Ala Glu  
 50 55 60  
 His Leu Leu Pro Gly Pro Pro Ser Leu Ala Asp Phe Leu Glu Ala  
 65 70 75 80  
 Gly Gly Lys Gly Thr Glu Arg Gly Ser Gly Ser Ser Lys Pro Thr Gly  
 85 90 95  
 Ser Ser Gly Gly Pro Arg Met Ala Ser Phe Pro Lys Thr Lys Phe Asn  
 100 105 110  
 Glu Tyr Lys Asp Val Leu Pro Cys Met Thr Ser Ser Arg Gly Gly Lys  
 115 120 125  
 Ile Lys Ala Thr Asp Phe Met Val Ala Met Arg Cys Leu Gly Ala Ser  
 130 135 140  
 Pro Thr Pro Gly Glu Val Gln Arg His Leu Gln Thr His Gly Ile Asp  
 145 150 155 160  
 Gly Asn Gly Glu Leu Asp Phe Ser Thr Phe Leu Thr Ile Met His Met  
 165 170 175  
 Gln Ile Lys Gln Glu Asp Pro Lys Lys Glu Ile Leu Leu Ala Met Leu  
 180 185 190  
 Met Val Asp Lys Glu Lys Lys Gly Tyr Val Met Ala Ser Asp Leu Arg  
 195 200 205  
 Ser Lys Leu Thr Ser Gly Glu Lys Leu Thr His Lys Glu Val Asp Asp  
 210 215 220  
 Leu Phe Arg Glu Ala Asp Ile Glu Pro Asn Gly Lys Val Lys Tyr Asp  
 225 230 235 240  
 Glu Phe Ile His Lys Ile Thr Leu  
 245

&lt;210&gt; 47

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 47

Leu Cys Cys Met His Tyr Cys Cys Lys Ser Cys Trp Asn Glu Tyr Leu  
 1 5 10 15  
 Thr Thr Arg Ile Glu Gln Asn Leu Val Leu Asn Cys Thr Cys Pro Ile  
 20 25 30  
 Ala Asp Cys Pro Ala Gln Pro Thr Gly Ala Phe Ile Arg Ala Ile Val  
 35 40 45  
 Ser Ser Pro Glu Val Ile Ser Lys Tyr Lys Ala Leu Leu Arg Gly Tyr  
 50 55 60  
 Val Glu Ser Cys Ser Asn Leu Thr Trp Cys Thr Asn Pro Gln Gly Cys  
 65 70 75 80  
 Asp Arg Ile Leu Cys Arg Gln Gly Leu Gly Cys Gly Thr Thr Cys Ser  
 85 90 95  
 Lys Cys Gly Trp Ala Ser Cys Phe Asn Cys Ser Phe Pro Glu Ala His  
 100 105 110  
 Tyr Pro Ala Ser Cys Gly His Met Ser Gln Trp Val Asp Asp Gly Gly

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          115          120          125
Tyr Tyr Asp Gly Met Ser Val Glu Ala Lys His Leu Ala Lys Leu Ile
    130          135          140
Ser Lys Arg Cys Pro Ser Cys Gln Ala Pro Ile Glu Asn Glu Gly Cys
145          150          155          160
Leu His Met Thr Cys Ala Lys Cys Asn His Gly Phe Cys Trp Arg Cys
    165          170          175
Leu

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<210> 48
<211> 102
<212> PRT
<213> Homo Sapiens

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<400> 48
Glu Lys Gly Leu His Ile Asp Gln Leu Val Cys Leu Val Leu Glu Ala
 1          5          10          15
Gln Lys Gly Pro Asn Pro Pro Gly Thr Leu Gly His Thr Val Ala Gly
    20          25          30
Gly Val Ala Cys Thr Thr Thr Val Leu Ser Cys Leu His Leu Leu Ser
    35          40          45
Gln Gly Tyr Lys Arg Asp Arg Pro Gln Ile Leu Met Tyr Ala Ala Pro
    50          55          60
Pro Met Gly Pro Cys Arg Gly Ala His Phe Cys Gly Ser Ser Gln Thr
65          70          75          80
Ser Pro Pro Lys Pro Val Ala Thr Leu Ser Leu Leu Pro Cys Pro Leu
    85          90          95
Pro Pro Leu Lys Asn Gly
    100

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<210> 49
<211> 179
<212> PRT
<213> Homo Sapiens

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<400> 49
His Lys Pro Cys Asn Pro Arg Glu Lys Glu Arg Ile Gln Asn Ala Gly
 1          5          10          15
Gly Ser Val Met Ile Gln Arg Val Asn Gly Ser Leu Ala Val Ser Arg
    20          25          30
Ala Leu Gly Asp Tyr Asp Tyr Lys Cys Val Asp Gly Lys Gly Pro Thr
    35          40          45
Glu Gln Leu Val Ser Pro Glu Pro Glu Val Tyr Glu Ile Leu Arg Ala
    50          55          60
Glu Glu Asp Glu Phe Ile Ile Leu Ala Cys Asp Gly Ile Trp Asp Val
65          70          75          80
Met Ser Asn Glu Glu Leu Cys Glu Tyr Val Lys Ser Arg Leu Glu Val
    85          90          95
Ser Asp Asp Leu Glu Asn Val Cys Asn Trp Val Val Asp Thr Cys Leu
    100          105          110
His Lys Gly Ser Arg Asp Asn Met Ser Ile Val Leu Val Cys Phe Ser
    115          120          125
Asn Ala Pro Lys Val Ser Asp Glu Ala Val Lys Lys Asp Ser Glu Leu
    130          135          140

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Asp Lys His Leu Glu Ser Ile Met Glu Asn Leu Ala Lys Glu Cys Leu  
 145 150 155 160  
 Ile Leu Pro Met Ser Cys Ala Ser Cys Leu Gln Lys Ile Ser Gln Ile  
 165 170 175  
 Cys Leu Leu

<210> 50  
 <211> 163  
 <212> PRT  
 <213> Homo Sapiens

<400> 50  
 Asp Leu Pro Thr Leu Glu Asp His Gln Lys Gln Ser Gln Gln Leu Lys  
 1 5 10 15  
 Asp Ser Glu Leu Lys Ser Thr Glu Leu Gln Glu Lys Val Thr Glu Leu  
 20 25 30  
 Glu Ser Leu Leu Glu Glu Thr Gln Ala Ile Cys Arg Glu Lys Glu Ile  
 35 40 45  
 Gln Leu Glu Ser Leu Arg Gln Arg Glu Ala Glu Phe Ser Ser Ala Gly  
 50 55 60  
 His Ser Leu Gln Asp Lys Gln Ser Val Glu Glu Thr Ser Gly Glu Gly  
 65 70 75 80  
 Pro Glu Val Glu Met Glu Ser Trp Gln Lys Arg Tyr Asp Ser Leu Gln  
 85 90 95  
 Lys Ile Val Glu Lys Gln Gln Gln Lys Met Asp Gln Leu Arg Ser Gln  
 100 105 110  
 Val Gln Ser Leu Glu Gln Glu Val Ala Glu Glu Gly Thr Ser Gln Ala  
 115 120 125  
 Leu Arg Glu Glu Ala Gln Arg Arg Asp Ser Ala Leu Gln Gln Leu Arg  
 130 135 140  
 Thr Ala Val Lys Leu Ser Val Asn Gln Asp Leu Ile Glu Lys Asn Leu  
 145 150 155 160  
 Thr Leu Gln

<210> 51  
 <211> 164  
 <212> PRT  
 <213> Homo Sapiens

<400> 51  
 Phe Gly Asp Ser Val Asp Cys Ser Asp Cys Trp Leu Pro Val Val Lys  
 1 5 10 15  
 Phe Ile Glu Glu Gln Phe Glu Gln Tyr Leu Arg Asp Glu Ser Gly Leu  
 20 25 30  
 Asn Arg Lys Asn Ile Gln Asp Ser Arg Val His Cys Cys Leu Tyr Phe  
 35 40 45  
 Ile Ser Pro Phe Gly Arg Gly Leu Arg Pro Leu Ala Phe Leu Arg Ala  
 50 55 60  
 Val His Lys Val Asn Ile Ile Pro Val Ile Gly Lys Ala Asp Ala Leu  
 65 70 75 80  
 Met Pro Gln Glu Thr Gln Ala Leu Lys Gln Lys Ile Arg Asp Gln Leu  
 85 90 95  
 Lys Glu Glu Glu Ile His Ile Tyr Gln Phe Pro Glu Cys Asp Ser Asp



	100		105		110
Glu Asp Glu Asp Phe Lys Arg Gln Asp Ala Met Lys Glu Ser Ile Pro					
	115		120		125
Phe Ala Val Val Gly Ser Cys Gln Val Val Arg Asp Gly Gly Asn Arg					
	130		135		140
Pro Val Arg Gly Arg Arg Tyr Ser Trp Gly Asn Val Glu Val Asn His					
145		150		155	160
Ile Ala Ile Ser					

<210> 52  
 <211> 600  
 <212> PRT  
 <213> Homo Sapiens

<400> 52

Met Cys Pro Arg Gln Val Asp Arg Ala Lys Glu Lys Gly Ile Gly Thr																			
1		5					10						15						
Pro Gln Pro Asp Val Ala Lys Asp Ser Trp Ala Glu Leu Glu Asn Ser																			
	20						25						30						
Ser Lys Glu Asn Glu Val Ile Glu Val Lys Ser Met Gly Glu Ser Gln																			
	35						40						45						
Ser Lys Lys Leu Gln Gly Gly Tyr Glu Cys Lys Tyr Cys Pro Tyr Ser																			
50						55						60							
Thr Gln Asn Leu Asn Glu Phe Thr Glu His Val Asp Met Gln His Pro																			
65					70						75								80
Asn Val Ile Leu Asn Pro Leu Tyr Val Cys Ala Glu Cys Asn Phe Thr																			
		85							90									95	
Thr Lys Lys Tyr Asp Ser Leu Ser Asp His Asn Ser Lys Phe His Pro																			
	100							105						110					
Gly Glu Ala Asn Phe Lys Leu Lys Leu Ile Lys Arg Asn Asn Gln Thr																			
	115							120						125					
Val Leu Glu Gln Ser Ile Glu Thr Thr Asn His Val Val Ser Ile Thr																			
	130							135						140					
Thr Ser Gly Pro Gly Thr Gly Asp Ser Asp Ser Gly Ile Ser Val Ser																			
145					150							155							160
Lys Thr Pro Ile Met Lys Pro Gly Lys Pro Lys Ala Asp Ala Lys Lys																			
		165							170										175
Val Pro Lys Lys Pro Glu Glu Ile Thr Pro Glu Asn His Val Glu Gly																			
	180								185										190
Thr Ala Arg Leu Val Thr Asp Thr Ala Glu Ile Leu Ser Arg Leu Gly																			
	195							200						205					
Gly Val Glu Leu Leu Gln Asp Thr Leu Gly His Val Met Pro Ser Val																			
	210							215						220					
Gln Leu Pro Pro Asn Ile Asn Leu Val Pro Lys Val Pro Val Pro Leu																			
225					230								235						240
Asn Thr Thr Lys Tyr Asn Ser Ala Leu Asp Thr Asn Ala Thr Met Ile																			
		245																	255
Asn Ser Phe Asn Lys Phe Pro Tyr Pro Thr Gln Ala Glu Leu Ser Trp																			
	260								265										270
Leu Thr Ala Ala Ser Lys His Pro Glu Glu His Ile Arg Ile Trp Phe																			
	275								280										285
Ala Thr Gln Arg Leu Lys His Gly Ile Ser Trp Ser Pro Glu Glu Val																			
	290							295						300					
Glu Glu Ala Arg Lys Lys Met Phe Asn Gly Thr Ile Gln Ser Val Pro																			

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<210> 53
<211> 163
<212> PRT
<213> Homo Sapiens
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-23-

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<210> 54
<211> 155
<212> PRT
<213> Homo Sapiens
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<210> 55
<211> 112
<212> PRT
<213> Homo Sapiens
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-24-

Met Gln Ala Leu Met Gln Ile Gln Gln Gly Leu Gln Thr Leu Ala Thr  
                             85                            90                            95  
 Glu Ala Pro Gly Leu Ile Pro Ser Phe Thr Pro Gly Val Gly Val Gly  
                             100                            105                            110

<210> 56  
 <211> 151  
 <212> PRT  
 <213> Homo Sapiens

<400> 56  
 Lys Phe Gly Met Pro Ile Asp Cys Gly Leu Pro Pro His Ile Asp Phe  
   1                            5                            10                            15  
 Gly Asp Cys Thr Lys Leu Lys Asp Asp Gln Gly Tyr Phe Glu Gln Glu  
                             20                            25                            30  
 Asp Asp Met Met Glu Val Pro Tyr Val Thr Pro His Pro Pro Tyr His  
                             35                            40                            45  
 Leu Gly Ala Val Ala Lys Thr Trp Glu Asn Thr Lys Glu Ser Pro Ala  
                             50                            55                            60  
 Thr His Ser Ser Asn Phe Leu Tyr Gly Thr Met Val Ser Tyr Thr Cys  
   65                            70                            75                            80  
 Asn Pro Gly Tyr Glu Leu Leu Gly Asn Pro Val Leu Ile Cys Gln Glu  
                             85                            90                            95  
 Asp Gly Thr Trp Asn Gly Ser Ala Pro Ser Cys Ile Ser Ile Glu Cys  
                             100                            105                            110  
 Asp Leu Pro Thr Ala Pro Glu Asn Gly Phe Leu Arg Phe Thr Glu Thr  
                             115                            120                            125  
 Ser Met Gly Ser Ala Val Gln Tyr Ser Cys Lys Pro Gly His Ile Leu  
                             130                            135                            140  
 Ala Gly Ser Asp Leu Arg Leu  
   145                            150

<210> 57  
 <211> 220  
 <212> PRT  
 <213> Homo Sapiens

<400> 57  
 Ala Ala Phe Val Ser Glu Val Thr Ser Phe Pro Val Val Gln Leu His  
   1                            5                            10                            15  
 Met Asn Arg Thr Ala Met Arg Ala Ser Gln Lys Asp Phe Glu Asn Ser  
                             20                            25                            30  
 Ile Asn Gln Val Lys Leu Leu Lys Lys Asp Pro Gly Asn Glu Val Lys  
                             35                            40                            45  
 Leu Lys Leu Tyr Ala Leu Tyr Lys Gln Ala Thr Glu Gly Pro Cys Asn  
                             50                            55                            60  
 Met Pro Lys Pro Gly Val Phe Asp Leu Ile Asn Lys Ala Lys Trp Asp  
   65                            70                            75                            80  
 Ala Trp Asn Ala Leu Gly Ser Leu Pro Lys Glu Ala Ala Arg Gln Asn  
                             85                            90                            95  
 Tyr Val Asp Leu Val Ser Ser Leu Ser Pro Ser Leu Glu Ser Ser Ser  
                             100                            105                            110  
 Gln Val Glu Pro Gly Thr Asp Arg Lys Ser Thr Gly Phe Glu Thr Leu  
                             115                            120                            125  
 Val Val Thr Ser Glu Asp Gly Ile Thr Lys Ile Met Phe Asn Arg Pro

130 135 140  
 Lys Lys Lys Asn Ala Ile Asn Thr Glu Met Tyr His Glu Ile Met Arg  
 145 150 155 160  
 Ala Leu Lys Ala Ala Ser Lys Asp Asp Ser Ile Ile Thr Val Leu Thr  
 165 170 175  
 Gly Asn Gly Asp Tyr Tyr Ser Ser Gly Asn Asp Leu Thr Asn Phe Thr  
 180 185 190  
 Asp Ile Pro Pro Gly Gly Val Glu Lys Ala Lys Asn Asn Ala Val Leu  
 195 200 205  
 Leu Lys Gly Ile Cys Gly Leu Phe Tyr Arg Ile Ser  
 210 215 220

<210> 58  
 <211> 101  
 <212> PRT  
 <213> Homo Sapiens

<400> 58  
 Trp Pro Asp Leu Val His Thr Trp Ser Ser Glu Glu Ala Met Gly Ser  
 1 5 10 15  
 Cys Cys Ser Cys Pro Asp Lys Asp Thr Val Pro Asp Asn His Arg Asn  
 20 25 30  
 Lys Phe Lys Val Ile Asn Val Asp Asp Asp Gly Asn Glu Leu Gly Ser  
 35 40 45  
 Gly Ile Met Glu Leu Thr Asp Thr Glu Leu Ile Leu Tyr Thr Arg Lys  
 50 55 60  
 Arg Asp Ser Val Lys Trp His Tyr Leu Cys Leu Arg Arg Tyr Gly Tyr  
 65 70 75 80  
 Asp Ser Asn Leu Phe Ser Phe Glu Ser Gly Pro Arg Cys Gln Thr Gly  
 85 90 95  
 Thr Arg Asn Leu Cys  
 100

<210> 59  
 <211> 43  
 <212> PRT  
 <213> Homo Sapiens

<400> 59  
 Ala His Gly Pro Gly Val Glu Pro Thr Ser Arg His Gln Lys Asn Asn  
 1 5 10 15  
 Leu Ser Ser Ser His Thr Val Arg Leu Glu Thr Arg Gly Gln Thr Glu  
 20 25 30  
 Asn Gln Glu Cys Leu Leu Cys Pro His Glu Glu  
 35 40

<210> 60  
 <211> 210  
 <212> PRT  
 <213> Homo Sapiens

<400> 60  
 Leu Asn Gln Trp Thr Tyr Gln Ala Met Val His Glu Leu Leu Gly Ile  
 1 5 10 15  
 Asn Asn Asn Arg Ile Asp Leu Ser Arg Val Pro Gly Ile Ser Lys Asp

20 25 30  
 Leu Arg Glu Val Val Leu Ser Ala Glu Asn Asp Glu Phe Tyr Ala Asn  
 35 40 45  
 Asn Met Tyr Leu Asn Phe Ala Glu Ile Gly Ser Asn Ile Lys Asn Leu  
 50 55 60  
 Met Glu Asp Phe Gln Lys Lys Lys Pro Lys Glu Gln Gln Lys Leu Glu  
 65 70 75 80  
 Ser Ile Ala Asp Met Lys Ala Phe Val Glu Asn Tyr Pro Gln Phe Lys  
 85 90 95  
 Lys Met Ser Gly Thr Val Ser Lys His Val Thr Val Val Gly Glu Leu  
 100 105 110  
 Ser Arg Leu Val Ser Glu Arg Asn Leu Leu Glu Val Ser Glu Val Glu  
 115 120 125  
 Gln Glu Leu Ala Cys Gln Asn Asp His Ser Ser Ala Leu Gln Asn Ile  
 130 135 140  
 Lys Arg Leu Leu Gln Asn Pro Lys Val Thr Glu Phe Asp Ala Ala Arg  
 145 150 155 160  
 Leu Val Met Leu Tyr Ala Leu His Tyr Glu Arg His Ser Ser Asn Ser  
 165 170 175  
 Leu Pro Gly Leu Met Met Leu Arg Asn Lys Gly Val Ser Glu Lys Tyr  
 180 185 190  
 Arg Lys Leu Val Ser Ala Val Val Glu Tyr Gly Gly Lys Thr Ser Gln  
 195 200 205  
 Arg Lys  
 210

<210> 61  
 <211> 40  
 <212> PRT  
 <213> Homo Sapiens

<400> 61  
 Thr Pro Gly Pro Gly Ala Gly Phe Tyr Ala Cys Pro Ala Arg Pro Leu  
 1 5 10 15  
 Val Ser Gly Ile Tyr Ser Phe Arg Trp Val Arg Gly Leu Ala Asp Gln  
 20 25 30  
 Glu Arg Asn Trp Gly Leu Ser Gln  
 35 40

<210> 62  
 <211> 238  
 <212> PRT  
 <213> Homo Sapiens

<400> 62  
 His Glu Ala Arg Leu Lys Arg Ala Ser Ala Pro Thr Phe Asp Asn Asp  
 1 5 10 15  
 Tyr Ser Leu Ser Glu Leu Leu Ser Gln Leu Asp Ser Gly Val Ser Gln  
 20 25 30  
 Ala Val Glu Gly Pro Glu Glu Leu Ser Arg Ser Ser Ser Glu Ser Lys  
 35 40 45  
 Leu Pro Ser Ser Gly Ser Gly Lys Arg Leu Ser Gly Val Ser Ser Val  
 50 55 60  
 Asp Ser Ala Phe Ser Ser Arg Gly Ser Leu Ser Leu Ser Phe Glu Arg  
 65 70 75 80

Glu Pro Ser Thr Ser Asp Leu Gly Thr Thr Asp Val Gln Lys Lys Lys  
                     85                    90                    95  
 Leu Val Asp Ala Ile Val Ser Gly Asp Thr Ser Lys Leu Met Lys Ile  
                     100                    105                    110  
 Leu Gln Pro Gln Asp Val Asp Leu Ala Leu Asp Ser Gly Ala Ser Leu  
                     115                    120                    125  
 Leu His Leu Ala Val Glu Ala Gly Gln Glu Glu Cys Ala Lys Trp Leu  
                     130                    135                    140  
 Leu Leu Asn Asn Ala Asn Pro Asn Leu Ser Asn Arg Arg Gly Ser Thr  
                     145                    150                    155                    160  
 Pro Leu His Met Ala Val Glu Arg Arg Val Arg Gly Val Val Glu Leu  
                     165                    170                    175  
 Leu Leu Ala Arg Ile Ser Val Asn Ala Lys Asp Glu Asp Gln Trp Thr  
                     180                    185                    190  
 Ala Leu His Phe Ala Asn Gly Gly Val His Thr Ala Ala Val Gly Glu  
                     195                    200                    205  
 Arg Leu Gly Gln Thr Lys Val Asp Phe Glu Gly Arg Thr Pro Met Gln  
                     210                    215                    220  
 Val Gly Leu Pro Thr Thr Gly Lys Asn Ile Leu Arg Ile Leu  
                     225                    230                    235

<210> 63  
 <211> 146  
 <212> PRT  
 <213> Homo Sapiens

<400> 63  
 Arg Leu Gly Ala Ala Met Met Glu Gly Leu Asp Asp Gly Pro Asp Phe  
   1                    5                    10                    15  
 Leu Ser Glu Glu Asp Arg Gly Leu Lys Ala Ile Asn Val Asp Leu Gln  
                     20                    25                    30  
 Ser Asp Ala Ala Leu Gln Val Asp Ile Ser Asp Ala Leu Ser Glu Arg  
                     35                    40                    45  
 Asp Lys Val Lys Phe Thr Val His Thr Lys Ile Pro Pro Ala Pro Pro  
                     50                    55                    60  
 Arg Pro Asp Phe Asp Ala Ser Arg Glu Lys Leu Gln Lys Leu Gly Glu  
                     65                    70                    75                    80  
 Gly Glu Gly Ser Met Thr Lys Glu Glu Phe Thr Lys Met Lys Gln Glu  
                     85                    90                    95  
 Leu Glu Ala Glu Tyr Leu Ala Ile Phe Lys Lys Thr Val Ala Met His  
                     100                    105                    110  
 Glu Val Phe Leu Cys Arg Val Ala Ala His Pro Ile Leu Arg Arg Asp  
                     115                    120                    125  
 Leu Asn Phe His Val Phe Leu Glu Tyr Asn Gln Asp Leu Ser Val Arg  
                     130                    135                    140  
 Gly Lys  
 145

<210> 64  
 <211> 63  
 <212> PRT  
 <213> Homo Sapiens

<400> 64  
 Glu Arg Gly His Ser Ile Lys Asp Phe Val Ser Phe Ala Arg His Phe

1	5	10	15
Ser Pro Asn Pro Arg Ile Val Ser Val Asn Ala Ser Tyr Ser Leu Ser			
	20	25	30
Asn Glu Ser Ser Leu Glu Gln Val Tyr Thr Leu Lys Met Ser Phe Ile			
	35	40	45
Ala Ser Asn Thr Tyr His Asn Gln Leu Tyr Lys Glu Gly Phe Leu			
50	55	60	

<210> 65  
 <211> 199  
 <212> PRT  
 <213> Homo Sapiens

<400> 65

Glu Ala Pro Asp Ser Ala Glu Gly Thr Thr Leu Thr Val Leu Pro Glu	
1	5
Gly Glu Glu Leu Pro Leu Cys Val Ser Glu Ser Asn Gly Leu Glu Leu	
	20
Pro Pro Ser Ala Ala Ser Asp Glu Pro Leu Gln Glu Pro Leu Glu Ala	
	35
Asp Arg Thr Ser Glu Glu Leu Thr Glu Ala Lys Thr Pro Thr Ser Ser	
50	55
Pro Glu Lys Pro Gln Glu Leu Val Thr Ala Glu Val Ala Ala Pro Ser	
65	70
Thr Ser Ser Ser Ala Thr Ser Ser Pro Glu Gly Pro Ser Pro Ala Arg	
	85
Pro Pro Arg Arg Arg Thr Ser Ala Asp Val Glu Ile Arg Gly Gln Gly	
	100
Thr Gly Arg Pro Gly Gln Pro Pro Gly Pro Lys Val Leu Arg Lys Leu	
	115
Pro Gly Arg Leu Val Thr Val Val Glu Glu Lys Glu Leu Val Arg Arg	
130	135
Arg Arg Gln Gln Arg Gly Ala Ala Ser Thr Leu Val Pro Gly Val Ser	
145	150
Glu Thr Ser Ala Ser Pro Gly Ser Pro Ser Val Arg Ser Met Ser Gly	
	165
Pro Glu Ser Ser Pro Pro Ile Gly Gly Pro Cys Glu Ala Ala Pro Ser	
	180
Ser Ser Leu Pro Thr Pro Pro	
195	

<210> 66  
 <211> 1599  
 <212> DNA  
 <213> Homo Sapiens

<400> 66

ttctttgaaa cattattatt cagaacgaag gagaatgata cagatacact ggctgaggtg	60
ttttgaggtg cattgaaatg ttccatgctg ttacttaggt taacatgttc ttgaggtacc	120
atgccatgga ttaaaaggaa atttggtgaag tggcttccac ctaaagcact tactagggaa	180
gctatgcgaa attattttaa agggtaaggg gatcaaatag tacttatcct tcatgcaaaa	240
gttgtagaga agtcatatgg caatcaaaaa attttttttt gccctccccc ttgtgtatat	300
cttatgggca gtggatggaa gaaaaaaaaa gaacaaatga aatgcgatgg ttgttctgaa	360
cacagctctc atccatgtgc atttattggg ataggaaata gtgaccaaga aatgcagcag	420
ctaaacttgg aaggaaagaa ctattgcaca gccaaaacat tgtacatatc tgattcagac	480



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aagcaaaagc acttcatttt ttctgtaaag gtgttctatg gcaacgggtga tgacattggg 540
gtgttcctca gcaagtagat aaaagtcac tccaaacctt ccaaaaagaa gcagtcattg 600
aaaaatgctg acttatgcat tgtctcagga acaaagggtg ctctgtttta tcgactacga 660
tcccagacag ttagtaccag atacttgcat gtagaaggag gtaattttca tgccagttca 720
cagcagtggg gagcatttta cattcaattc ttggatgatg atggatcaga aggagaagaa 780
ttcacagtct gagatgccta cattcattat ggacaaacat gcaaacttgt gtgctcagtt 840
actggcatgg cactcccaag attgataatt atgaaagttg ataagcatac cgcattattg 900
gatgcagatg atcctgtgtc acaactccat aaatgtgcat tttaccttaa ggatacagaa 960
agaatgtatt tgtgcctttc tcaagaaaga ataattcaat ttcaggccac tccatgtcca 1020
agagaaccaa ataaagagat gataaatgat ggcgcttctt ggacaatcat tagcacagat 1080
aaggcagggg atacatttta tgagggaatg ggccctgtcc ttgccccagt cactcctgtg 1140
cctgtggtag agagccttca gttgaatggc ggtggggacg tagcaatgct tgaacttaca 1200
ggacagaatt tcaactccaaa tttacgagtg tggtttgggg gggtagaagc tgaactatg 1260
tacagggtgt gagagagtat gctctgtgtc gtcccagaca tttctgcatt ccgagaaggt 1320
tggagatggg tccggcaacc agtccagggt ccagtaactt tggtcgaaa tgatggaatc 1380
atattattcca ccagccttac ctttacctac acaccagaac cagggccgcg gccacattgc 1440
agtgcagcag gagcaatcct tctagccaat tcaagccagg tgccccctaa cgaatcaaac 1500
acaaacagcg agggaagtta cacaaacgcc agcacaaatt caaccagtgt cacatcatct 1560
acagccacag tgggtatccta actaccgtct ttttgctag 1599

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&lt;210&gt; 67

&lt;211&gt; 729

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 67

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Met Gly Lys Lys Tyr Lys Asn Ile Val Leu Leu Lys Gly Leu Glu Val
1 5 10 15
Ile Asn Asp Tyr His Phe Arg Met Val Lys Ser Leu Leu Ser Asn Asp
20 25 30
Leu Lys Leu Asn Leu Lys Met Arg Glu Glu Tyr Asp Lys Ile Gln Ile
35 40 45
Ala Asp Leu Met Glu Glu Lys Phe Arg Gly Asp Ala Gly Leu Gly Lys
50 55 60
Leu Ile Lys Ile Phe Glu Asp Ile Pro Thr Leu Glu Asp Leu Ala Glu
65 70 75 80
Thr Leu Lys Lys Glu Lys Leu Lys Val Lys Gly Pro Ala Leu Ser Arg
85 90 95
Lys Arg Lys Lys Glu Val His Ala Thr Ser Pro Ala Pro Ser Thr Ser
100 105 110
Ser Thr Val Lys Thr Glu Gly Ala Glu Ala Thr Pro Gly Ala Gln Lys
115 120 125
Arg Lys Lys Ser Thr Lys Glu Lys Ala Gly Pro Lys Gly Ser Lys Val
130 135 140
Ser Glu Glu Gln Thr Gln Pro Pro Ser Pro Ala Gly Ala Gly Met Ser
145 150 155 160
Thr Ala Met Gly Arg Ser Pro Ser Pro Lys Thr Ser Leu Ser Ala Pro
165 170 175
Pro Asn Ser Ser Ser Thr Glu Asn Pro Lys Thr Val Ala Lys Cys Gln
180 185 190
Val Thr Pro Arg Arg Asn Val Leu Gln Lys Arg Pro Val Ile Val Lys
195 200 205
Val Leu Ser Thr Thr Lys Pro Phe Glu Tyr Glu Thr Pro Glu Met Glu
210 215 220
Lys Lys Ile Met Phe His Ala Thr Val Ala Thr Gln Thr Gln Phe Phe

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225          230          235          240
His Val Lys Val Leu Asn Thr Ser Leu Lys Glu Lys Phe Asn Gly Lys
          245          250          255
Lys Ile Ile Ile Ile Ser Asp Tyr Leu Glu Tyr Asp Ser Leu Leu Glu
          260          265          270
Val Asn Glu Glu Ser Thr Val Ser Glu Ala Gly Pro Asn Gln Thr Phe
          275          280          285
Glu Val Pro Asn Lys Ile Ile Asn Arg Ala Lys Glu Thr Leu Lys Ile
          290          295          300
Asp Ile Leu His Lys Lys Gln Ala Ser Gly Asn Ile Val Tyr Gly Val Phe
305          310          315          320
Met Leu His Lys Lys Thr Val Asn Gln Lys Thr Thr Ile Tyr Glu Ile
          325          330          335
Gln Asp Asp Arg Gly Lys Met Asp Val Val Gly Thr Gly Gln Cys His
          340          345          350
Asn Ile Pro Cys Glu Glu Gly Asp Lys Leu Gln Leu Phe Cys Phe Arg
          355          360          365
Leu Arg Lys Lys Asn Gln Met Ser Lys Leu Ile Ser Glu Met His Ser
          370          375          380
Phe Ile Gln Ile Lys Lys Thr Asn Pro Arg Asn Asn Asp Pro Lys
385          390          395          400
Ser Met Lys Leu Pro Gln Glu Gln Arg Gln Leu Pro Tyr Pro Ser Glu
          405          410          415
Ala Ser Thr Thr Phe Pro Glu Ser His Leu Arg Thr Pro Gln Met Pro
          420          425          430
Pro Thr Thr Pro Ser Ser Ser Phe Phe Thr Lys Lys Ser Glu Asp Thr
          435          440          445
Ile Ser Lys Met Asn Asp Phe Met Arg Met Gln Ile Leu Lys Glu Gly
          450          455          460
Ser His Phe Pro Gly Pro Phe Met Thr Ser Ile Gly Pro Ala Glu Ser
465          470          475          480
His Pro His Thr Pro Gln Met Pro Pro Ser Thr Pro Ser Ser Ser Phe
          485          490          495
Leu Thr Thr Leu Lys Pro Arg Leu Lys Thr Glu Pro Glu Glu Val Ser
          500          505          510
Ile Glu Asp Ser Ala Gln Ser Asp Leu Lys Glu Val Met Val Leu Asn
          515          520          525
Ala Thr Glu Ser Phe Val Tyr Glu Pro Lys Glu Gln Lys Lys Met Phe
          530          535          540
His Ala Thr Val Ala Thr Glu Asn Glu Val Phe Arg Val Lys Val Phe
545          550          555          560
Asn Ile Asp Leu Lys Glu Lys Phe Thr Pro Lys Lys Ile Ile Ala Ile
          565          570          575
Ala Asn Tyr Val Cys Arg Asn Gly Phe Leu Glu Val Tyr Pro Phe Thr
          580          585          590
Leu Val Ala Asp Val Asn Ala Asp Ala Asn Met Glu Ile Pro Lys Gly
          595          600          605
Leu Ile Arg Ser Ala Ser Val Thr Pro Lys Ile Asn Gln Leu Cys Ser
          610          615          620
Gln Thr Lys Gly Ser Phe Val Asn Gly Val Phe Glu Val His Lys Lys
625          630          635          640
Asn Val Arg Gly Glu Phe Thr Tyr Tyr Glu Ile Gln Asp Asn Thr Gly
          645          650          655
Lys Met Glu Val Val Val His Gly Arg Leu Asn Thr Ile Asn Cys Glu
          660          665          670

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Glu Gly Asp Lys Leu Lys Leu Thr Ser Phe Glu Leu Ala Pro Lys Ser  
 675 680 685  
 Gly Asn Thr Gly Glu Leu Arg Ser Val Ile His Ser His Ile Lys Val  
 690 695 700  
 Ile Lys Thr Lys Lys Asn Lys Lys Asp Ile Leu Asn Pro Asp Ser Ser  
 705 710 715 720  
 Met Glu Thr Ser Pro Asp Phe Phe Phe  
 725

&lt;210&gt; 68

&lt;211&gt; 754

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 68

Met Ala Ser Val Pro Ala Leu Gln Leu Thr Pro Ala Asn Pro Pro Pro  
 1 5 10 15  
 Pro Glu Val Ser Asn Pro Lys Lys Pro Gly Arg Val Thr Asn Gln Leu  
 20 25 30  
 Gln Tyr Leu His Lys Val Val Met Lys Ala Leu Trp Lys His Gln Phe  
 35 40 45  
 Ala Trp Pro Phe Arg Gln Pro Val Asp Ala Val Lys Leu Gly Leu Pro  
 50 55 60  
 Asp Tyr His Lys Ile Ile Lys Gln Pro Met Asp Met Gly Thr Ile Lys  
 65 70 75 80  
 Arg Arg Leu Glu Asn Asn Tyr Tyr Trp Ala Ala Ser Glu Cys Met Gln  
 85 90 95  
 Asp Phe Asn Thr Met Phe Thr Asn Cys Tyr Ile Tyr Asn Lys Pro Thr  
 100 105 110  
 Asp Asp Ile Val Leu Met Ala Gln Thr Leu Glu Lys Ile Phe Leu Gln  
 115 120 125  
 Lys Val Ala Ser Met Pro Gln Glu Glu Gln Glu Leu Val Val Thr Ile  
 130 135 140  
 Pro Lys Asn Ser His Lys Lys Gly Ala Lys Leu Ala Ala Leu Gln Gly  
 145 150 155 160  
 Ser Val Thr Ser Ala His Gln Val Pro Ala Val Ser Ser Val Ser His  
 165 170 175  
 Thr Ala Leu Tyr Thr Pro Pro Pro Glu Ile Pro Thr Thr Val Leu Asn  
 180 185 190  
 Ile Pro His Pro Ser Val Ile Ser Ser Pro Leu Leu Lys Ser Leu His  
 195 200 205  
 Ser Ala Gly Pro Pro Leu Leu Ala Val Thr Ala Ala Pro Pro Ala Gln  
 210 215 220  
 Pro Leu Ala Lys Lys Lys Gly Val Lys Arg Lys Ala Asp Thr Thr Thr  
 225 230 235 240  
 Pro Thr Pro Thr Ala Ile Leu Ala Pro Gly Ser Pro Ala Ser Pro Pro  
 245 250 255  
 Gly Ser Leu Glu Pro Lys Ala Ala Arg Leu Pro Pro Met Arg Arg Glu  
 260 265 270  
 Ser Gly Arg Pro Ile Lys Pro Pro Arg Lys Asp Leu Pro Asp Ser Gln  
 275 280 285  
 Gln Gln His Gln Ser Ser Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys  
 290 295 300  
 His Cys Asn Gly Ile Leu Lys Glu Leu Leu Ser Lys Lys His Ala Ala  
 305 310 315 320

Tyr Ala Trp Pro Phe Tyr Lys Pro Val Asp Ala Ser Ala Leu Gly Leu  
 325 330 335  
 His Asp Tyr His Asp Ile Ile Lys His Pro Met Asp Leu Ser Thr Val  
 340 345 350  
 Lys Arg Lys Met Glu Asn Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala  
 355 360 365  
 Ala Asp Val Arg Leu Met Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro  
 370 375 380  
 Asp His Asp Val Val Ala Met Ala Arg Lys Leu Gln Asp Val Phe Glu  
 385 390 395 400  
 Phe Arg Tyr Ala Lys Met Pro Asp Glu Pro Leu Glu Pro Gly Pro Leu  
 405 410 415  
 Pro Val Ser Thr Ala Met Pro Pro Gly Leu Ala Lys Ser Ser Ser Glu  
 420 425 430  
 Ser Ser Ser Glu Glu Ser Ser Ser Glu Ser Ser Ser Glu Glu Glu Glu  
 435 440 445  
 Glu Glu Asp Glu Glu Asp Glu Glu Glu Glu Ser Glu Ser Ser Asp  
 450 455 460  
 Ser Glu Glu Glu Arg Ala His Arg Leu Ala Glu Leu Gln Glu Gln Leu  
 465 470 475 480  
 Arg Ala Val His Glu Gln Leu Ala Ala Leu Ser Gln Gly Pro Ile Ser  
 485 490 495  
 Lys Pro Lys Arg Lys Arg Glu Lys Lys Glu Lys Lys Lys Lys Arg Lys  
 500 505 510  
 Ala Glu Lys His Arg Gly Arg Ala Gly Ala Asp Glu Asp Asp Lys Gly  
 515 520 525  
 Pro Arg Ala Pro Arg Pro Pro Gln Pro Lys Lys Ser Lys Lys Ala Ser  
 530 535 540  
 Gly Ser Gly Gly Gly Ser Ala Ala Leu Gly Pro Ser Gly Phe Gly Pro  
 545 550 555 560  
 Ser Gly Gly Ser Gly Thr Lys Leu Pro Lys Lys Ala Thr Lys Thr Ala  
 565 570 575  
 Pro Pro Ala Leu Pro Thr Gly Tyr Asp Ser Glu Glu Glu Glu Glu Ser  
 580 585 590  
 Arg Pro Met Ser Tyr Asp Glu Lys Arg Gln Leu Ser Leu Asp Ile Asn  
 595 600 605  
 Lys Leu Pro Gly Glu Lys Leu Gly Arg Val Val His Ile Ile Gln Ala  
 610 615 620  
 Arg Glu Pro Ser Leu Arg Asp Ser Asn Pro Glu Glu Ile Glu Ile Asp  
 625 630 635 640  
 Phe Glu Thr Leu Lys Pro Ser Thr Leu Arg Glu Leu Glu Arg Tyr Val  
 645 650 655  
 Leu Ser Cys Leu Arg Lys Lys Pro Arg Lys Pro Tyr Thr Ile Lys Lys  
 660 665 670  
 Pro Val Gly Lys Thr Lys Glu Glu Leu Ala Leu Glu Lys Lys Arg Glu  
 675 680 685  
 Leu Glu Lys Arg Leu Gln Asp Val Ser Gly Gln Leu Asn Ser Thr Lys  
 690 695 700  
 Lys Pro Pro Lys Lys Ala Asn Glu Lys Thr Glu Ser Ser Ser Ala Gln  
 705 710 715 720  
 Gln Val Ala Val Ser Arg Leu Ser Ala Ser Ser Ser Ser Ser Asp Ser  
 725 730 735  
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Asp Thr Ser Asp Ser Asp  
 740 745 750  
 Ser Gly

<210> 69  
 <211> 210  
 <212> PRT  
 <213> Homo Sapiens

<400> 69  
 Met Asp Asp Glu Glu Glu Thr Tyr Arg Leu Trp Lys Ile Arg Lys Thr  
 1 5 10 15  
 Ile Met Gln Leu Cys His Asp Arg Gly Tyr Leu Val Thr Gln Asp Glu  
 20 25 30  
 Leu Asp Gln Thr Leu Glu Glu Phe Lys Ala Gln Phe Gly Asp Lys Pro  
 35 40 45  
 Ser Glu Gly Arg Pro Arg Arg Thr Asp Leu Thr Val Leu Val Ala His  
 50 55 60  
 Asn Asp Asp Pro Thr Asp Gln Met Phe Val Phe Pro Glu Glu Pro  
 65 70 75 80  
 Lys Val Gly Ile Lys Thr Ile Lys Val Tyr Cys Gln Arg Met Gln Glu  
 85 90 95  
 Glu Asn Ile Thr Arg Ala Leu Ile Val Val Gln Gln Gly Met Thr Pro  
 100 105 110  
 Ser Ala Lys Gln Ser Leu Val Asp Met Ala Pro Lys Tyr Ile Leu Glu  
 115 120 125  
 Gln Phe Leu Gln Gln Glu Leu Leu Ile Asn Ile Thr Glu His Glu Leu  
 130 135 140  
 Val Pro Glu His Val Val Met Thr Lys Glu Glu Val Thr Glu Leu Leu  
 145 150 155 160  
 Ala Arg Tyr Lys Leu Arg Glu Asn Gln Leu Pro Arg Ile Gln Ala Gly  
 165 170 175  
 Asp Pro Val Ala Arg Tyr Phe Gly Ile Lys Arg Gly Gln Val Val Lys  
 180 185 190  
 Ile Ile Arg Pro Ser Glu Thr Ala Gly Arg Tyr Ile Thr Tyr Arg Leu  
 195 200 205  
 Val Gln  
 210

<210> 70  
 <211> 621  
 <212> PRT  
 <213> Homo Sapiens

<400> 70  
 Met Leu Leu Leu Pro Ser Ala Ala Glu Gly Gln Gly Thr Ala Ile Thr  
 1 5 10 15  
 His Ala Leu Thr Ser Ala Ser Ser Val Cys Gln Val Glu Pro Val Gly  
 20 25 30  
 Arg Trp Phe Glu Ala Phe Val Lys Arg Arg Asn Arg Asn Ala Ser Thr  
 35 40 45  
 Ser Phe Gln Glu Leu Glu Asp Lys Lys Glu Leu Ser Glu Glu Ser Glu  
 50 55 60  
 Asp Glu Glu Leu Gln Leu Glu Glu Phe Pro Met Leu Lys Thr Leu Asp  
 65 70 75 80  
 Pro Lys Asp Trp Lys Asn Gln Asp His Tyr Ala Val Leu Gly Leu Gly  
 85 90 95

His Val Arg Tyr Thr Ala Thr Gln Arg Gln Ile Lys Ala Ala His Lys  
 100 105 110  
 Ala Met Val Leu Lys His His Pro Asp Lys Arg Lys Ala Ala Gly Glu  
 115 120 125  
 Pro Ile Lys Glu Gly Asp Asn Asp Tyr Phe Thr Cys Ile Thr Lys Ala  
 130 135 140  
 Tyr Glu Met Leu Ser Asp Pro Val Lys Arg Arg Ala Phe Asn Ser Val  
 145 150 155 160  
 Asp Pro Thr Phe Asp Asn Ser Val Pro Ser Lys Ser Glu Ala Lys Asp  
 165 170 175  
 Asn Phe Phe Gln Val Phe Ser Pro Val Phe Glu Arg Asn Ser Arg Trp  
 180 185 190  
 Ser Asn Lys Lys Asn Val Pro Lys Leu Gly Asp Met Asn Ser Ser Phe  
 195 200 205  
 Glu Asp Val Asp Ala Phe Tyr Ser Phe Trp Tyr Asn Phe Asp Ser Trp  
 210 215 220  
 Arg Glu Phe Ser Tyr Leu Asp Glu Glu Glu Lys Glu Lys Ala Glu Cys  
 225 230 235 240  
 Arg Asp Glu Arg Lys Trp Ile Glu Lys Gln Asn Arg Ala Thr Arg Ala  
 245 250 255  
 Gln Arg Lys Lys Glu Glu Met Asn Arg Ile Arg Thr Leu Val Asp Asn  
 260 265 270  
 Ala Tyr Ser Cys Asp Pro Arg Ile Lys Lys Phe Lys Glu Glu Glu Lys  
 275 280 285  
 Ala Lys Lys Glu Ala Glu Lys Lys Ala Lys Ala Glu Ala Arg Arg Lys  
 290 295 300  
 Glu Gln Glu Ala Lys Glu Lys Gln Arg Gln Ala Glu Leu Glu Ala Val  
 305 310 315 320  
 Arg Leu Ala Lys Glu Lys Glu Glu Glu Glu Val Arg Gln Gln Ala Leu  
 325 330 335  
 Leu Ala Lys Lys Glu Lys Asp Ile Gln Lys Lys Ala Ile Lys Lys Glu  
 340 345 350  
 Arg Gln Lys Leu Arg Asn Ser Cys Lys Ser Trp Asn His Phe Ser Asp  
 355 360 365  
 Asn Glu Ala Asp Arg Val Lys Met Met Glu Glu Val Glu Lys Leu Cys  
 370 375 380  
 Asp Arg Leu Glu Leu Ala Ser Leu Gln Gly Leu Asn Glu Ile Leu Ala  
 385 390 395 400  
 Ser Ser Thr Arg Glu Val Gly Lys Ala Ala Leu Glu Lys Gln Ile Glu  
 405 410 415  
 Glu Val Asn Glu Gln Met Arg Arg Glu Lys Glu Glu Ala Asp Ala Arg  
 420 425 430  
 Met Arg Gln Ala Ser Lys Asn Ala Glu Lys Ser Thr Gly Gly Ser Gly  
 435 440 445  
 Ser Gly Ser Lys Asn Trp Ser Glu Asp Asp Leu Gln Leu Leu Ile Lys  
 450 455 460  
 Ala Val Asn Leu Phe Pro Ala Gly Thr Asn Ser Arg Trp Glu Val Ile  
 465 470 475 480  
 Ala Asn Tyr Met Asn Ile His Ser Ser Ser Gly Val Lys Arg Thr Ala  
 485 490 495  
 Lys Asp Val Ile Ser Lys Ala Lys Ser Leu Gln Lys Leu Asp Pro His  
 500 505 510  
 Gln Lys Asp Asp Ile Asn Lys Lys Ala Phe Asp Lys Phe Lys Lys Glu  
 515 520 525  
 His Gly Val Ala Ser Gln Ala Asp Ser Ala Ala Pro Ser Glu Arg Phe

530		535		540
Glu Gly Pro Cys Ile Asp Ser Thr Pro Trp Thr Thr Glu Glu Gln Lys				
545		550		555
Leu Leu Glu Gln Ala Leu Lys Thr Tyr Pro Val Asn Thr Pro Glu Arg				560
		565		570
Trp Glu Lys Ile Ala Glu Ala Val Pro Gly Arg Thr Lys Lys Asp Cys				575
		580		585
Met Arg Arg Tyr Lys Glu Leu Val Glu Met Val Lys Ala Lys Lys Ala				590
		595		600
Ala Gln Glu Gln Val Leu Asn Ala Ser Arg Ala Arg Lys				605
610		615		620

<210> 71  
 <211> 267  
 <212> PRT  
 <213> Homo Sapiens

<400> 71

Met Ala Ser Leu Leu Lys Val Asp Gln Glu Val Lys Leu Lys Val Asp				
1	5	10	15	
Ser Phe Arg Glu Arg Ile Thr Ser Lys Ala Glu Asp Leu Val Ala Asn				
20	25	30		
Phe Phe Pro Lys Lys Leu Leu Glu Leu Asp Ser Phe Leu Lys Glu Pro				
35	40	45		
Ile Leu Asn Ile His Asp Leu Thr Gln Ile His Ser Asp Met Asn Leu				
50	55	60		
Pro Val Pro Asp Pro Ile Leu Leu Thr Asn Ser His Asp Gly Leu Asp				
65	70	75	80	
Gly Pro Thr Tyr Lys Lys Arg Arg Leu Asp Glu Cys Glu Glu Ala Phe				
85	90	95		
Gln Gly Thr Lys Val Phe Val Met Pro Asn Gly Met Leu Lys Ser Asn				
100	105	110		
Gln Gln Leu Val Asp Ile Ile Glu Lys Val Lys Pro Glu Ile Arg Leu				
115	120	125		
Leu Ile Glu Lys Cys Asn Thr Pro Ser Gly Lys Gly Pro His Ile Cys				
130	135	140		
Phe Asp Leu Gln Val Lys Met Trp Val Gln Leu Leu Ile Pro Arg Ile				
145	150	155	160	
Glu Asp Gly Asn Asn Phe Gly Val Ser Ile Gln Glu Glu Thr Val Ala				
165	170	175		
Glu Leu Arg Thr Val Glu Ser Glu Ala Ala Ser Tyr Leu Asp Gln Ile				
180	185	190		
Ser Arg Tyr Tyr Ile Thr Arg Ala Lys Leu Val Ser Lys Ile Ala Lys				
195	200	205		
Tyr Pro His Val Glu Asp Tyr Arg Arg Thr Val Thr Glu Ile Asp Glu				
210	215	220		
Lys Glu Tyr Ile Ser Leu Arg Leu Ile Ile Ser Glu Leu Arg Asn Gln				
225	230	235	240	
Tyr Val Thr Leu His Asp Met Ile Leu Lys Asn Ile Glu Lys Ile Lys				
245	250	255		
Arg Pro Arg Ser Ser Asn Ala Glu Thr Leu Tyr				
260	265			

<210> 72  
 <211> 1752

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 72

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Arg Glu Lys Arg Arg Arg Lys Ser Val Glu Asp Arg Phe Asp Gln Gln
 1          5          10          15
Lys Asn Asp Tyr Asp Gln Leu Gln Lys Ala Arg Gln Cys Glu Lys Glu
 20          25          30
Asn Leu Gly Trp Gln Lys Leu Glu Ser Glu Lys Ala Ile Lys Glu Lys
 35          40          45
Glu Tyr Glu Ile Glu Arg Leu Arg Val Leu Leu Gln Glu Glu Gly Thr
 50          55          60
Arg Lys Arg Glu Tyr Glu Asn Glu Leu Ala Lys Val Arg Asn His Tyr
 65          70          75          80
Asn Glu Glu Met Ser Asn Leu Arg Asn Lys Tyr Glu Thr Glu Ile Asn
 85          90          95
Ile Thr Lys Thr Thr Ile Lys Glu Ile Ser Met Gln Lys Glu Asp Asp
 100          105          110
Ser Lys Asn Leu Arg Asn Gln Leu Asp Arg Leu Ser Arg Glu Asn Arg
 115          120          125
Asp Leu Lys Asp Glu Ile Val Arg Leu Asn Asp Ser Ile Leu Gln Ala
 130          135          140
Thr Glu Gln Arg Arg Arg Ala Glu Glu Asn Ala Leu Gln Gln Lys Ala
 145          150          155          160
Cys Gly Ser Glu Ile Met Gln Lys Lys Gln His Leu Glu Ile Glu Leu
 165          170          175
Lys Gln Val Met Gln Gln Arg Ser Glu Asp Asn Ala Arg His Lys Gln
 180          185          190
Ser Leu Glu Glu Ala Ala Lys Thr Ile Gln Asp Lys Asn Lys Glu Ile
 195          200          205
Glu Arg Leu Lys Ala Glu Phe Gln Glu Glu Ala Lys Arg Arg Trp Glu
 210          215          220
Tyr Glu Asn Glu Leu Ser Lys Val Arg Asn Asn Tyr Asp Glu Glu Ile
 225          230          235          240
Ile Ser Leu Lys Asn Gln Phe Glu Thr Glu Ile Asn Ile Thr Lys Thr
 245          250          255
Thr Ile His Gln Leu Thr Met Gln Lys Glu Glu Asp Thr Ser Gly Tyr
 260          265          270
Arg Ala Gln Ile Asp Asn Leu Thr Arg Glu Asn Arg Ser Leu Ser Glu
 275          280          285
Glu Ile Lys Arg Leu Lys Asn Thr Leu Thr Gln Thr Thr Glu Asn Leu
 290          295          300
Arg Arg Val Glu Glu Asp Ile Gln Gln Gln Lys Ala Thr Gly Ser Glu
 305          310          315          320
Val Ser Gln Arg Lys Gln Gln Leu Glu Val Glu Leu Arg Gln Val Thr
 325          330          335
Gln Met Arg Thr Glu Glu Ser Val Arg Tyr Lys Gln Ser Leu Asp Asp
 340          345          350
Ala Ala Lys Thr Ile Gln Asp Lys Asn Lys Glu Ile Glu Arg Leu Lys
 355          360          365
Gln Leu Ile Asp Lys Glu Thr Asn Asp Arg Lys Cys Leu Glu Asp Glu
 370          375          380
Asn Ala Arg Leu Gln Arg Val Gln Tyr Asp Leu Gln Lys Ala Asn Ser
 385          390          395          400
Ser Ala Thr Glu Thr Ile Asn Lys Leu Lys Val Gln Glu Gln Glu Leu

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Phe Asp Gly Leu Arg Lys Lys Val Thr Ala Met Gln Leu Tyr Glu Cys  
 850 855 860  
 Gln Leu Ile Asp Lys Thr Thr Leu Asp Lys Leu Leu Lys Gly Lys Lys  
 865 870 875 880  
 Ser Val Glu Glu Val Ala Ser Glu Ile Gln Pro Phe Leu Arg Gly Ala  
 885 890 895  
 Gly Ser Ile Ala Gly Ala Ser Ala Ser Pro Lys Glu Lys Tyr Ser Leu  
 900 905 910  
 Val Glu Ala Lys Arg Lys Lys Leu Ile Ser Pro Glu Ser Thr Val Met  
 915 920 925  
 Leu Leu Glu Ala Gln Ala Ala Thr Gly Gly Ile Ile Asp Pro His Arg  
 930 935 940  
 Asn Glu Lys Leu Thr Val Asp Ser Ala Ile Ala Arg Asp Leu Ile Asp  
 945 950 955 960  
 Phe Asp Asp Arg Gln Gln Ile Tyr Ala Ala Glu Lys Ala Ile Thr Gly  
 965 970 975  
 Phe Asp Asp Pro Phe Ser Gly Lys Thr Val Ser Val Ser Glu Ala Ile  
 980 985 990  
 Lys Lys Asn Leu Ile Asp Arg Glu Thr Gly Met Arg Leu Leu Glu Ala  
 995 1000 1005  
 Gln Ile Ala Ser Gly Gly Val Val Asp Pro Val Asn Ser Val Phe Leu  
 1010 1015 1020  
 Pro Lys Asp Val Ala Leu Ala Arg Gly Leu Ile Asp Arg Asp Leu Tyr  
 1025 1030 1035 104  
 Arg Ser Leu Asn Asp Pro Arg Asp Ser Gln Lys Asn Phe Val Asp Pro  
 1045 1050 1055  
 Val Thr Lys Lys Lys Val Ser Tyr Val Gln Leu Lys Glu Arg Cys Arg  
 1060 1065 1070  
 Ile Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser  
 1075 1080 1085  
 Met Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val  
 1090 1095 1100  
 Asp Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly  
 1105 1110 1115 112  
 Gln Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln  
 1125 1130 1135  
 Gly Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys  
 1140 1145 1150  
 Leu Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr  
 1155 1160 1165  
 Ala Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp  
 1170 1175 1180  
 Pro Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly  
 1185 1190 1195 120  
 Leu Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala  
 1205 1210 1215  
 Val Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe  
 1220 1225 1230  
 Gln Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu  
 1235 1240 1245  
 Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser  
 1250 1255 1260  
 His Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu  
 1265 1270 1275 128  
 Glu Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe

	1285		1290		1295
Phe Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu					
	1300		1305		1310
Arg Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys					
	1315		1320		1325
Glu Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys					
	1330		1335		1340
Arg Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val					
	1345		1350		1355
Gln Glu Ala Tyr Lys Lys Gly Leu Ile Asp Tyr Glu Thr Phe Lys Glu					
	1365		1370		1375
Leu Cys Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr Ile Thr Gly Ser					
	1380		1385		1390
Asp Gly Ser Thr Arg Val Val Leu Val Asp Arg Lys Thr Gly Ser Gln					
	1395		1400		1405
Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly Leu Val Asp Arg Lys Phe					
	1410		1415		1420
Phe Asp Gln Tyr Arg Ser Gly Ser Leu Ser Leu Thr Gln Phe Ala Asp					
	1425		1430		1435
Met Ile Ser Leu Lys Asn Gly Val Gly Thr Ser Ser Ser Met Gly Ser					
	1445		1450		1455
Gly Val Ser Asp Asp Val Phe Ser Ser Ser Arg His Glu Ser Val Ser					
	1460		1465		1470
Lys Ile Ser Thr Ile Ser Ser Val Arg Asn Leu Thr Ile Arg Ser Ser					
	1475		1480		1485
Ser Phe Ser Asp Thr Leu Glu Glu Ser Ser Pro Ile Ala Ala Ile Phe					
	1490		1495		1500
Asp Thr Glu Asn Leu Glu Lys Ile Ser Ile Thr Glu Gly Ile Glu Arg					
	1505		1510		1515
Gly Ile Val Asp Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala					
	1525		1530		1535
Cys Thr Gly Gly Ile Ile His Pro Thr Thr Gly Gln Lys Leu Ser Leu					
	1540		1545		1550
Gln Asp Ala Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala Thr Ser					
	1555		1560		1565
Val Lys Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val Lys Gly					
	1570		1575		1580
Lys Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp Leu Pro					
	1585		1590		1595
Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu Thr Gly Gly					
	1605		1610		1615
Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr Glu Glu Ala Ile					
	1620		1625		1630
Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln Arg Leu Gln Asp Thr					
	1635		1640		1645
Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro Lys Thr Lys Leu Lys Ile					
	1650		1655		1660
Ser Tyr Lys Asp Ala Ile Asn Arg Ser Met Val Glu Asp Ile Thr Gly					
	1665		1670		1675
Leu Arg Leu Leu Glu Ala Ala Ser Val Ser Ser Lys Gly Leu Pro Ser					
	1685		1690		1695
Pro Tyr Asn Met Ser Ser Ala Pro Gly Ser Arg Ser Gly Ser Arg Ser					
	1700		1705		1710
Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Arg					
	1715		1720		1725

Gly Ser Phe Asp Ala Thr Gly Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser  
 1730 1735 1740  
 Phe Ser Ser Ser Ser Ile Gly His  
 1745 1750

<210> 73  
 <211> 1978  
 <212> PRT  
 <213> Homo Sapiens

<400> 73  
 Met Ser Arg Pro Arg Phe Asn Pro Arg Gly Asp Phe Pro Leu Gln Arg  
 1 5 10 15  
 Pro Arg Ala Pro Asn Pro Ser Gly Met Arg Pro Pro Gly Pro Phe Met  
 20 25 30  
 Arg Pro Gly Ser Met Gly Leu Pro Arg Phe Tyr Pro Ala Gly Arg Ala  
 35 40 45  
 Arg Gly Ile Pro His Arg Phe Ala Gly Leu Glu Ser Tyr Gln Asn Met  
 50 55 60  
 Gly Pro Gln Arg Met Asn Val Gln Val Thr Gln His Arg Thr Asp Pro  
 65 70 75 80  
 Arg Leu Thr Lys Glu Lys Leu Asp Phe His Glu Ala Gln Gln Lys Lys  
 85 90 95  
 Gly Lys Pro His Gly Ser Arg Trp Asp Asp Glu Pro His Ile Ser Ala  
 100 105 110  
 Ser Val Ala Val Lys Gln Ser Ser Val Thr Gln Val Thr Glu Gln Ser  
 115 120 125  
 Pro Lys Val Gln Ser Arg Tyr Thr Lys Glu Ser Ala Ser Ser Ile Leu  
 130 135 140  
 Ala Ser Phe Gly Leu Ser Asn Glu Asp Leu Glu Glu Leu Ser Arg Tyr  
 145 150 155 160  
 Pro Asp Glu Gln Leu Thr Pro Glu Asn Met Pro Leu Ile Leu Arg Asp  
 165 170 175  
 Ile Arg Met Arg Lys Met Gly Arg Arg Leu Pro Asn Leu Pro Ser Gln  
 180 185 190  
 Ser Arg Asn Lys Glu Thr Leu Gly Ser Glu Ala Val Ser Ser Asn Val  
 195 200 205  
 Ile Asp Tyr Gly His Ala Ser Lys Tyr Gly Tyr Thr Glu Asp Pro Leu  
 210 215 220  
 Glu Val Arg Ile Tyr Asp Pro Glu Ile Pro Thr Asp Glu Val Glu Asn  
 225 230 235 240  
 Glu Phe Gln Ser Gln Asn Ile Ser Ala Ser Val Pro Asn Pro Asn  
 245 250 255  
 Val Ile Cys Asn Ser Met Phe Pro Val Glu Asp Val Phe Arg Gln Met  
 260 265 270  
 Asp Phe Pro Gly Glu Ser Ser Asn Asn Arg Ser Phe Phe Ser Val Glu  
 275 280 285  
 Ser Gly Thr Lys Met Ser Gly Leu His Ile Ser Gly Gly Gln Ser Val  
 290 295 300  
 Leu Glu Pro Ile Lys Ser Val Asn Gln Ser Ile Asn Gln Thr Val Ser  
 305 310 315 320  
 Gln Thr Met Ser Gln Ser Leu Ile Pro Pro Ser Met Asn Gln Gln Pro  
 325 330 335  
 Phe Ser Ser Glu Leu Ile Ser Ser Val Ser Gln Gln Glu Arg Ile Pro  
 340 345 350

His Glu Pro Val Ile Asn Ser Ser Asn Val His Val Gly Ser Arg Gly  
 355 360 365  
 Ser Lys Lys Asn Tyr Gln Ser Gln Ala Asp Ile Pro Ile Arg Ser Pro  
 370 375 380  
 Phe Gly Ile Val Lys Ala Ser Trp Leu Pro Lys Phe Ser His Ala Asp  
 385 390 395 400  
 Ala Gln Lys Met Lys Arg Leu Pro Thr Pro Ser Met Met Asn Asp Tyr  
 405 410 415  
 Tyr Ala Ala Ser Pro Arg Ile Phe Pro His Leu Cys Ser Leu Cys Asn  
 420 425 430  
 Val Glu Cys Ser His Leu Lys Asp Trp Ile Gln His Gln Asn Thr Ser  
 435 440 445  
 Thr His Ile Glu Ser Cys Arg Gln Leu Arg Gln Gln Tyr Pro Asp Trp  
 450 455 460  
 Asn Pro Glu Ile Leu Pro Ser Arg Arg Asn Glu Gly Asn Arg Lys Glu  
 465 470 475 480  
 Asn Glu Thr Pro Arg Arg Arg Ser His Ser Pro Ser Pro Arg Arg Ser  
 485 490 495  
 Arg Arg Ser Ser Ser Ser His Arg Phe Arg Arg Ser Arg Ser Pro Met  
 500 505 510  
 His Tyr Met Tyr Arg Pro Arg Ser Arg Ser Pro Arg Ile Cys His Arg  
 515 520 525  
 Phe Ile Ser Arg Tyr Arg Ser Arg Ser Arg Ser Arg Ser Pro Tyr Arg  
 530 535 540  
 Ile Arg Asn Pro Phe Arg Gly Ser Pro Lys Cys Phe Arg Ser Val Ser  
 545 550 555 560  
 Pro Glu Arg Met Ser Arg Arg Ser Val Arg Ser Ser Asp Arg Lys Lys  
 565 570 575  
 Ala Leu Glu Asp Val Val Gln Arg Ser Gly His Gly Thr Glu Phe Asn  
 580 585 590  
 Lys Gln Lys His Leu Glu Ala Ala Asp Lys Gly His Ser Pro Ala Gln  
 595 600 605  
 Lys Pro Lys Thr Ser Ser Gly Thr Lys Pro Ser Val Lys Pro Thr Ser  
 610 615 620  
 Ala Thr Lys Ser Asp Ser Asn Leu Gly Gly His Ser Ile Arg Cys Lys  
 625 630 635 640  
 Ser Lys Asn Leu Glu Asp Asp Thr Leu Ser Glu Cys Lys Gln Val Ser  
 645 650 655  
 Asp Lys Ala Val Ser Leu Gln Arg Lys Leu Arg Lys Glu Gln Ser Leu  
 660 665 670  
 His Tyr Gly Ser Val Leu Leu Ile Thr Glu Leu Pro Glu Asp Gly Cys  
 675 680 685  
 Thr Glu Glu Asp Val Arg Lys Leu Phe Gln Pro Phe Gly Lys Val Asn  
 690 695 700  
 Asp Val Leu Ile Val Pro Tyr Arg Lys Glu Ala Tyr Leu Glu Met Glu  
 705 710 715 720  
 Phe Lys Glu Ala Ile Thr Ala Ile Met Lys Tyr Ile Glu Thr Thr Pro  
 725 730 735  
 Leu Thr Ile Lys Gly Lys Ser Val Lys Ile Cys Val Pro Gly Lys Lys  
 740 745 750  
 Lys Ala Gln Asn Lys Glu Val Lys Lys Lys Thr Leu Glu Ser Lys Lys  
 755 760 765  
 Val Ser Ala Ser Thr Leu Lys Arg Asp Ala Asp Ala Ser Lys Ala Val  
 770 775 780  
 Glu Ile Val Thr Ser Thr Ser Ala Ala Lys Thr Gly Gln Ala Lys Ala

785		790		795		800
Cys Val Ala Lys	Val Asn Lys Ser Thr Gly Lys Ser Ala Ser Ser Val					
	805		810		815	
Lys Ser Val Val Thr Val Ala Val Lys Gly Asn Lys Ala Ser Ile Lys						
	820		825		830	
Thr Ala Lys Ser Gly Gly Lys Lys Ser Leu Glu Ala Lys Lys Thr Gly						
	835		840		845	
Asn Val Lys Asn Lys Asp Ser Asn Lys Pro Val Thr Ile Pro Glu Asn						
	850		855		860	
Ser Glu Ile Lys Thr Ser Ile Glu Val Lys Ala Thr Glu Asn Cys Ala						
865		870		875		880
Lys Glu Ala Ile Ser Asp Ala Ala Leu Glu Ala Thr Glu Asn Glu Pro						
	885		890		895	
Leu Asn Lys Glu Thr Glu Glu Met Cys Val Met Leu Val Ser Asn Leu						
	900		905		910	
Pro Asn Lys Gly Tyr Ser Val Glu Glu Val Tyr Asp Leu Ala Lys Pro						
	915		920		925	
Phe Gly Gly Leu Lys Asp Ile Leu Ile Leu Ser Ser His Lys Lys Ala						
	930		935		940	
Tyr Ile Glu Ile Asn Arg Lys Ala Ala Glu Ser Met Val Lys Phe Tyr						
945		950		955		960
Thr Cys Phe Pro Val Leu Met Asp Gly Asn Gln Leu Ser Ile Ser Met						
	965		970		975	
Ala Pro Glu Asn Met Asn Ile Lys Asp Glu Glu Ala Ile Phe Ile Thr						
	980		985		990	
Leu Val Lys Glu Asn Asp Pro Glu Ala Asn Ile Asp Thr Ile Tyr Asp						
	995		1000		1005	
Arg Phe Val His Leu Asp Asn Leu Pro Glu Asp Gly Leu Gln Cys Val						
	1010		1015		1020	
Leu Cys Val Gly Leu Gln Phe Gly Lys Val Asp His His Val Phe Ile						
1025		1030		1035		104
Ser Asn Arg Asn Lys Ala Ile Leu Gln Leu Asp Ser Pro Glu Ser Ala						
	1045		1050		1055	
Gln Ser Met Tyr Ser Phe Leu Lys Gln Asn Pro Gln Asn Ile Gly Asp						
	1060		1065		1070	
His Met Leu Thr Cys Ser Leu Ser Pro Lys Ile Asp Leu Pro Glu Val						
	1075		1080		1085	
Gln Ile Glu His Asp Pro Glu Leu Glu Lys Glu Ser Pro Gly Leu Lys						
	1090		1095		1100	
Asn Ser Pro Ile Asp Glu Ser Glu Val Gln Thr Ala Thr Asp Ser Pro						
1105		1110		1115		112
Ser Val Lys Pro Asn Glu Leu Glu Glu Glu Ser Thr Pro Ser Ile Gln						
	1125		1130		1135	
Thr Glu Thr Leu Val Gln Gln Glu Glu Pro Cys Glu Glu Glu Ala Glu						
	1140		1145		1150	
Lys Ala Thr Cys Asp Ser Asp Phe Ala Val Glu Thr Leu Glu Leu Glu						
	1155		1160		1165	
Thr Gln Gly Glu Glu Val Lys Glu Glu Ile Pro Leu Val Ala Ser Ala						
	1170		1175		1180	
Ser Val Ser Ile Glu Gln Phe Thr Glu Asn Ala Glu Glu Cys Ala Leu						
1185		1190		1195		120
Asn Gln Gln Met Phe Asn Ser Asp Leu Glu Lys Lys Gly Ala Glu Ile						
	1205		1210		1215	
Ile Asn Pro Lys Thr Ala Leu Leu Pro Ser Asp Ser Val Phe Ala Glu						
	1220		1225		1230	

Glu Arg Asn Leu Lys Gly Ile Leu Glu Glu Ser Pro Ser Glu Ala Glu  
 1235 1240 1245  
 Asp Phe Ile Ser Gly Ile Thr Gln Thr Met Val Glu Ala Val Ala Glu  
 1250 1255 1260  
 Val Glu Lys Asn Glu Thr Val Ser Glu Ile Leu Pro Ser Thr Cys Ile  
 1265 1270 1275 128  
 Val Thr Leu Val Pro Gly Ile Pro Thr Gly Asp Glu Lys Thr Val Asp  
 1285 1290 1295  
 Lys Lys Asn Ile Ser Glu Lys Lys Gly Asn Met Asp Glu Lys Glu Glu  
 1300 1305 1310  
 Lys Glu Phe Asn Thr Lys Glu Thr Arg Met Asp Leu Gln Ile Gly Thr  
 1315 1320 1325  
 Glu Lys Ala Glu Lys Asn Glu Gly Arg Met Asp Ala Glu Lys Val Glu  
 1330 1335 1340  
 Lys Met Ala Ala Met Lys Glu Lys Pro Ala Glu Asn Thr Leu Phe Lys  
 1345 1350 1355 136  
 Ala Tyr Pro Asn Lys Gly Val Gly Gln Ala Asn Lys Pro Asp Glu Thr  
 1365 1370 1375  
 Ser Lys Thr Ser Ile Leu Ala Val Ser Asp Val Ser Ser Ser Lys Pro  
 1380 1385 1390  
 Ser Ile Lys Ala Val Ile Val Ser Ser Pro Lys Ala Lys Ala Thr Val  
 1395 1400 1405  
 Ser Lys Thr Glu Asn Gln Lys Ser Phe Pro Lys Ser Val Pro Arg Asp  
 1410 1415 1420  
 Gln Ile Asn Ala Glu Lys Lys Leu Ser Ala Lys Glu Phe Gly Leu Leu  
 1425 1430 1435 144  
 Lys Pro Thr Ser Ala Arg Ser Gly Leu Ala Glu Ser Ser Ser Lys Phe  
 1445 1450 1455  
 Lys Pro Thr Gln Ser Ser Leu Thr Arg Gly Gly Ser Gly Arg Ile Ser  
 1460 1465 1470  
 Ala Leu Gln Gly Lys Leu Ser Lys Leu Asp Tyr Arg Asp Ile Thr Lys  
 1475 1480 1485  
 Gln Ser Gln Glu Thr Glu Ala Arg Pro Ser Ile Met Lys Arg Asp Asp  
 1490 1495 1500  
 Ser Asn Asn Lys Thr Leu Ala Glu Gln Asn Thr Lys Asn Pro Lys Ser  
 1505 1510 1515 152  
 Thr Thr Gly Arg Ser Ser Lys Ser Lys Glu Pro Leu Phe Pro Phe  
 1525 1530 1535  
 Asn Leu Asp Glu Phe Val Thr Val Asp Glu Val Ile Glu Glu Val Asn  
 1540 1545 1550  
 Pro Ser Gln Ala Lys Gln Asn Pro Leu Lys Gly Lys Arg Lys Glu Thr  
 1555 1560 1565  
 Leu Lys Asn Val Pro Phe Ser Glu Leu Asn Leu Lys Lys Lys Gly  
 1570 1575 1580  
 Lys Thr Ser Thr Pro Arg Gly Val Glu Gly Glu Leu Ser Phe Val Thr  
 1585 1590 1595 160  
 Leu Asp Glu Ile Gly Glu Glu Glu Asp Ala Ala Ala His Leu Ala Gln  
 1605 1610 1615  
 Ala Leu Val Thr Val Asp Glu Val Ile Asp Glu Glu Glu Leu Asn Met  
 1620 1625 1630  
 Glu Glu Met Val Lys Asn Ser Asn Ser Leu Phe Thr Leu Asp Glu Leu  
 1635 1640 1645  
 Ile Asp Gln Asp Asp Cys Ile Ser His Ser Glu Pro Lys Asp Val Thr  
 1650 1655 1660  
 Val Leu Ser Val Ala Glu Glu Gln Asp Leu Leu Lys Gln Glu Arg Leu

1665                      1670                      1675                      168  
 Val Thr Val Asp Glu Ile Gly Glu Val Glu Glu Leu Pro Leu Asn Glu  
                                  1685                      1690                      1695  
 Ser Ala Asp Ile Thr Phe Ala Thr Leu Asn Thr Lys Gly Asn Glu Gly  
                                  1700                      1705                      1710  
 Asp Ile Val Arg Asp Ser Ile Gly Phe Ile Ser Ser Gln Val Pro Glu  
                                  1715                      1720                      1725  
 Asp Pro Ser Thr Leu Val Thr Val Asp Glu Ile Gln Asp Asp Ser Ser  
                                  1730                      1735                      1740  
 Asp Leu His Leu Val Thr Leu Asp Glu Val Thr Glu Glu Asp Glu Asp  
 1745                      1750                      1755                      176  
 Ser Leu Ala Asp Phe Asn Asn Leu Lys Glu Glu Leu Asn Phe Val Thr  
                                  1765                      1770                      1775  
 Val Asp Glu Val Gly Glu Glu Glu Asp Gly Asp Asn Asp Leu Lys Val  
                                  1780                      1785                      1790  
 Glu Leu Ala Gln Ser Lys Asn Asp His Pro Thr Asp Lys Lys Gly Asn  
                                  1795                      1800                      1805  
 Arg Lys Lys Arg Ala Val Asp Thr Lys Lys Thr Lys Leu Glu Ser Leu  
                                  1810                      1815                      1820  
 Ser Gln Val Gly Pro Val Asn Glu Asn Val Met Glu Glu Asp Leu Lys  
 1825                      1830                      1835                      184  
 Thr Met Ile Glu Arg His Leu Thr Ala Lys Thr Pro Thr Lys Arg Val  
                                  1845                      1850                      1855  
 Arg Ile Gly Lys Thr Leu Pro Ser Glu Lys Ala Val Val Thr Glu Pro  
                                  1860                      1865                      1870  
 Ala Lys Gly Glu Glu Ala Phe Gln Met Ser Glu Val Asp Glu Glu Ser  
                                  1875                      1880                      1885  
 Gly Leu Lys Asp Ser Glu Pro Glu Arg Lys Arg Lys Lys Thr Glu Asp  
                                  1890                      1895                      1900  
 Ser Ser Ser Gly Lys Ser Val Ala Ser Asp Val Pro Glu Glu Leu Asp  
 1905                      1910                      1915                      192  
 Phe Leu Val Pro Lys Ala Gly Phe Phe Cys Pro Ile Cys Ser Leu Phe  
                                  1925                      1930                      1935  
 Tyr Ser Gly Glu Lys Ala Met Thr Asn His Cys Lys Ser Thr Arg His  
                                  1940                      1945                      1950  
 Lys Gln Asn Thr Glu Lys Phe Met Ala Lys Gln Arg Lys Glu Lys Glu  
                                  1955                      1960                      1965  
 Gln Asn Glu Ala Glu Glu Arg Ser Ser Arg  
                                  1970                      1975

&lt;210&gt; 74

&lt;211&gt; 366

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 74

Met Arg Val Met Ala Pro Arg Thr Leu Ile Leu Leu Leu Ser Gly Ala  
 1                      5                      10                      15  
 Leu Ala Leu Thr Glu Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe  
                                  20                      25                      30  
 Tyr Thr Ala Val Ser Arg Pro Gly Arg Gly Glu Pro His Phe Ile Ala  
                                  35                      40                      45  
 Val Gly Tyr Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala  
                                  50                      55                      60  
 Ala Ser Pro Arg Gly Glu Pro Arg Ala Pro Trp Val Glu Gln Glu Gly



65					70					75					80
Pro	Glu	Tyr	Trp	Asp	Arg	Glu	Thr	Gln	Lys	Tyr	Lys	Arg	Gln	Ala	Gln
				85					90					95	
Thr	Asp	Arg	Val	Ser	Leu	Arg	Asn	Leu	Arg	Gly	Tyr	Tyr	Asn	Gln	Ser
			100					105					110		
Glu	Ala	Gly	Ser	His	Ile	Ile	Gln	Arg	Met	Tyr	Gly	Cys	Asp	Val	Gly
		115					120					125			
Pro	Asp	Gly	Arg	Leu	Leu	Arg	Gly	Tyr	Asp	Gln	Tyr	Ala	Tyr	Asp	Gly
	130					135					140				
Lys	Asp	Tyr	Ile	Ala	Leu	Asn	Glu	Asp	Leu	Arg	Ser	Trp	Thr	Ala	Ala
145					150					155					160
Asp	Thr	Ala	Ala	Gln	Ile	Thr	Gln	Arg	Lys	Trp	Glu	Ala	Ala	Arg	Glu
				165					170					175	
Ala	Glu	Gln	Leu	Arg	Ala	Tyr	Leu	Glu	Gly	Leu	Cys	Val	Glu	Trp	Leu
			180					185					190		
Arg	Arg	Tyr	Leu	Lys	Asn	Gly	Lys	Glu	Thr	Leu	Gln	Arg	Ala	Glu	His
	195					200						205			
Pro	Lys	Thr	His	Val	Thr	His	His	Pro	Val	Ser	Asp	His	Glu	Ala	Thr
	210					215					220				
Leu	Arg	Cys	Trp	Ala	Leu	Gly	Phe	Tyr	Pro	Ala	Glu	Ile	Thr	Leu	Thr
225					230					235					240
Trp	Gln	Trp	Asp	Gly	Glu	Asp	Gln	Thr	Gln	Asp	Thr	Glu	Leu	Val	Glu
			245						250					255	
Thr	Arg	Pro	Ala	Gly	Asp	Gly	Thr	Phe	Gln	Lys	Trp	Ala	Ala	Val	Val
			260					265						270	
Val	Pro	Ser	Gly	Glu	Glu	Gln	Arg	Tyr	Thr	Cys	His	Val	Gln	His	Glu
	275						280					285			
Gly	Leu	Pro	Glu	Pro	Leu	Thr	Leu	Arg	Trp	Glu	Pro	Ser	Ser	Gln	Pro
	290					295				300					
Thr	Ile	Pro	Ile	Val	Gly	Ile	Val	Ala	Gly	Leu	Ala	Val	Leu	Ala	Val
305					310					315					320
Leu	Ala	Val	Leu	Gly	Ala	Val	Val	Ala	Val	Val	Met	Cys	Arg	Arg	Lys
			325					330						335	
Ser	Ser	Gly	Gly	Lys	Gly	Gly	Ser	Cys	Ser	Gln	Ala	Ala	Ser	Ser	Asn
		340					345						350		
Ser	Ala	Gln	Gly	Ser	Asp	Glu	Ser	Leu	Ile	Ala	Cys	Lys	Ala		
	355						360					365			

&lt;210&gt; 75

&lt;211&gt; 240

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 75

Met	Gly	Leu	Glu	Leu	Tyr	Leu	Asp	Leu	Leu	Ser	Gln	Pro	Cys	Arg	Ala
1				5				10					15		
Val	Tyr	Ile	Phe	Ala	Lys	Lys	Asn	Asp	Ile	Pro	Phe	Glu	Leu	Arg	Ile
			20					25				30			
Val	Asp	Leu	Ile	Lys	Gly	Gln	His	Leu	Ser	Asp	Ala	Phe	Ala	Gln	Val
		35				40					45				
Asn	Pro	Leu	Lys	Lys	Val	Pro	Ala	Leu	Lys	Asp	Gly	Asp	Phe	Thr	Leu
	50				55					60					
Thr	Glu	Ser	Val	Ala	Ile	Leu	Leu	Tyr	Leu	Thr	Arg	Lys	Tyr	Lys	Val
65				70						75					80
Pro	Asp	Tyr	Trp	Tyr	Pro	Gln	Asp	Leu	Gln	Ala	Arg	Ala	Arg	Val	Asp

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<210> 76
<211> 953
<212> PRT
<213> Homo Sapiens
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225		230		235		240									
Asn	Leu	Leu	Met	Ala	Tyr	Gln	Ile	Cys	Phe	Asp	Leu	Tyr	Glu	Ser	Ala
				245					250					255	
Ser	Gln	Gln	Phe	Leu	Ser	Ser	Val	Ile	Gln	Asn	Leu	Arg	Thr	Val	Gly
			260					265						270	
Thr	Pro	Ile	Ala	Ser	Val	Pro	Gly	Ser	Thr	Asn	Thr	Gly	Thr	Val	Pro
		275					280						285		
Gly	Ser	Glu	Lys	Asp	Ser	Asp	Ser	Met	Glu	Thr	Glu	Glu	Lys	Thr	Ser
	290					295					300				
Ser	Ala	Phe	Val	Gly	Lys	Thr	Pro	Glu	Ala	Ser	Pro	Glu	Pro	Lys	Asp
305					310					315				320	
Gln	Thr	Leu	Lys	Met	Ile	Lys	Ile	Leu	Ser	Gly	Glu	Met	Ala	Ile	Glu
				325					330					335	
Leu	His	Leu	Gln	Phe	Leu	Ile	Arg	Asn	Asn	Asn	Thr	Asp	Leu	Met	Ile
			340					345					350		
Leu	Lys	Asn	Thr	Lys	Asp	Ala	Val	Arg	Asn	Ser	Val	Cys	His	Thr	Ala
	355					360						365			
Thr	Val	Ile	Ala	Asn	Ser	Phe	Met	His	Cys	Gly	Thr	Thr	Ser	Asp	Gln
	370					375						380			
Phe	Leu	Arg	Asp	Asn	Leu	Glu	Trp	Leu	Ala	Arg	Ala	Thr	Asn	Trp	Ala
385					390					395				400	
Lys	Phe	Thr	Ala	Thr	Ala	Ser	Leu	Gly	Val	Ile	His	Lys	Gly	His	Glu
				405					410					415	
Lys	Glu	Ala	Leu	Gln	Leu	Met	Ala	Thr	Tyr	Leu	Pro	Lys	Asp	Thr	Ser
			420					425					430		
Pro	Gly	Ser	Ala	Tyr	Gln	Glu	Gly	Gly	Gly	Leu	Tyr	Ala	Leu	Gly	Leu
	435						440					445			
Ile	His	Ala	Asn	His	Gly	Gly	Asp	Ile	Ile	Asp	Tyr	Leu	Leu	Asn	Gln
	450					455					460				
Leu	Lys	Asn	Ala	Ser	Asn	Asp	Ile	Val	Arg	His	Gly	Gly	Ser	Leu	Gly
465					470					475				480	
Leu	Gly	Leu	Ala	Ala	Met	Gly	Thr	Ala	Arg	Gln	Asp	Val	Tyr	Asp	Leu
				485					490					495	
Leu	Lys	Thr	Asn	Leu	Tyr	Gln	Asp	Asp	Ala	Val	Thr	Gly	Glu	Ala	Ala
			500					505					510		
Gly	Leu	Ala	Leu	Gly	Leu	Val	Met	Leu	Gly	Ser	Lys	Asn	Ala	Gln	Ala
	515						520					525			
Ile	Glu	Asp	Met	Val	Gly	Tyr	Ala	Gln	Glu	Thr	Gln	His	Glu	Lys	Ile
	530					535					540				
Leu	Arg	Gly	Leu	Ala	Val	Gly	Ile	Ala	Leu	Val	Met	Tyr	Gly	Arg	Met
545					550					555				560	
Glu	Glu	Ala	Asp	Ala	Leu	Ile	Glu	Ser	Leu	Cys	Arg	Asp	Lys	Asp	Pro
				565					570					575	
Ile	Leu	Arg	Arg	Ser	Gly	Met	Tyr	Thr	Val	Ala	Met	Ala	Tyr	Cys	Gly
			580					585					590		
Ser	Gly	Asn	Asn	Lys	Ala	Ile	Arg	Arg	Leu	Leu	His	Val	Ala	Val	Ser
		595					600					605			
Asp	Val	Asn	Asp	Asp	Val	Arg	Ser	Ala	Ala	Val	Glu	Ser	Leu	Gly	Phe
	610					615					620				
Ile	Leu	Phe	Arg	Thr	Pro	Glu	Gln	Cys	Pro	Ser	Val	Val	Ser	Leu	Leu
625					630					635				640	
Ser	Glu	Ser	Tyr	Asn	Pro	His	Val	Arg	Tyr	Gly	Ala	Ala	Met	Ala	Leu
				645					650				655		
Gly	Ile	Cys	Cys	Ala	Gly	Thr	Gly	Asn	Lys	Glu	Ala	Ile	Asn	Leu	Leu
			660					665					670		

Glu Pro Met Thr Asn Asp Pro Val Asn Tyr Val Arg Gln Gly Ala Leu  
 675 680 685  
 Ile Ala Ser Ala Leu Ile Met Ile Gln Gln Thr Glu Ile Thr Cys Pro  
 690 695 700  
 Lys Val Asn Gln Phe Arg Gln Leu Tyr Ser Lys Val Ile Asn Asp Lys  
 705 710 715 720  
 His Asp Asp Val Met Ala Lys Phe Gly Ala Ile Leu Ala Gln Gly Ile  
 725 730 735  
 Leu Asp Ala Gly Gly His Asn Val Thr Ile Ser Leu Gln Ser Arg Thr  
 740 745 750  
 Gly His Thr His Met Pro Ser Val Val Gly Val Leu Val Phe Thr Gln  
 755 760 765  
 Phe Trp Phe Trp Phe Pro Leu Ser His Phe Leu Ser Leu Ala Tyr Thr  
 770 775 780  
 Pro Thr Cys Val Ile Gly Leu Asn Lys Asp Leu Lys Met Pro Lys Val  
 785 790 795 800  
 Gln Tyr Lys Ser Asn Cys Lys Pro Ser Thr Phe Ala Tyr Pro Ala Pro  
 805 810 815  
 Leu Glu Val Pro Lys Glu Lys Glu Lys Glu Lys Val Ser Thr Ala Val  
 820 825 830  
 Leu Ser Ile Thr Ala Lys Ala Lys Lys Glu Lys Glu Lys Glu Lys  
 835 840 845  
 Lys Glu Glu Glu Lys Met Glu Val Asp Glu Ala Glu Lys Lys Glu Glu  
 850 855 860  
 Lys Glu Lys Lys Lys Glu Pro Glu Pro Asn Phe Gln Leu Leu Asp Asn  
 865 870 875 880  
 Pro Ala Arg Val Met Pro Ala Gln Leu Lys Val Leu Thr Met Pro Glu  
 885 890 895  
 Thr Cys Arg Tyr Gln Pro Phe Lys Pro Leu Ser Ile Gly Gly Ile Ile  
 900 905 910  
 Ile Leu Lys Asp Thr Ser Glu Asp Ile Glu Glu Leu Val Glu Pro Val  
 915 920 925  
 Ala Ala His Gly Pro Lys Ile Glu Glu Glu Glu Gln Glu Pro Glu Pro  
 930 935 940  
 Pro Glu Pro Phe Glu Tyr Ile Asp Asp  
 945 950

&lt;210&gt; 77

&lt;211&gt; 335

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 77

Met Gly Lys Val Lys Val Gly Val Asn Gly Phe Gly Arg Ile Gly Arg  
 1 5 10 15  
 Leu Val Thr Arg Ala Ala Phe Asn Ser Gly Lys Val Asp Ile Val Ala  
 20 25 30  
 Ile Asn Asp Pro Phe Ile Asp Leu Asn Tyr Met Val Tyr Met Phe Gln  
 35 40 45  
 Tyr Asp Ser Thr His Gly Lys Phe His Gly Thr Val Lys Ala Glu Asn  
 50 55 60  
 Gly Lys Leu Val Ile Asn Gly Asn Pro Ile Thr Ile Phe Gln Glu Arg  
 65 70 75 80  
 Asp Pro Ser Lys Ile Lys Trp Gly Asp Ala Gly Ala Glu Tyr Val Val  
 85 90 95

Glu Ser Thr Gly Val Phe Thr Thr Met Glu Lys Ala Gly Ala His Leu  
 100 105 110  
 Gln Gly Gly Ala Lys Arg Val Ile Ile Ser Ala Pro Ser Ala Asp Ala  
 115 120 125  
 Pro Met Phe Val Met Gly Val Asn His Glu Lys Tyr Asp Asn Ser Leu  
 130 135 140  
 Lys Ile Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu  
 145 150 155 160  
 Ala Lys Val Ile His Asp Asn Phe Gly Ile Val Glu Gly Leu Met Thr  
 165 170 175  
 Thr Val His Ala Ile Thr Ala Thr Gln Lys Thr Val Asp Gly Pro Ser  
 180 185 190  
 Gly Lys Leu Trp Arg Asp Gly Arg Gly Ala Leu Gln Asn Ile Ile Pro  
 195 200 205  
 Ala Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Glu Leu  
 210 215 220  
 Asn Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Ala Asn Val  
 225 230 235 240  
 Ser Val Val Asp Leu Thr Cys Arg Leu Glu Lys Pro Ala Lys Tyr Asp  
 245 250 255  
 Asp Ile Lys Lys Val Val Lys Gln Ala Ser Glu Gly Pro Leu Lys Gly  
 260 265 270  
 Ile Leu Gly Tyr Thr Glu His Gln Val Val Ser Ser Asp Phe Asn Ser  
 275 280 285  
 Asp Thr His Ser Ser Thr Phe Asp Ala Gly Ala Gly Ile Ala Leu Asn  
 290 295 300  
 Asp His Phe Val Lys Leu Ile Ser Trp Tyr Asp Asn Glu Phe Gly Tyr  
 305 310 315 320  
 Ser Asn Arg Val Val Asp Leu Met Ala His Met Ala Ser Lys Glu  
 325 330 335

<210> 78  
 <211> 117  
 <212> PRT  
 <213> Homo Sapiens

<400> 78  
 Met Val Gln Arg Leu Thr Tyr Arg Arg Arg Leu Ser Tyr Asn Thr Ala  
 1 5 10 15  
 Ser Asn Lys Thr Arg Leu Ser Arg Thr Pro Gly Asn Arg Ile Val Tyr  
 20 25 30  
 Leu Tyr Thr Lys Lys Val Gly Lys Ala Pro Lys Ser Ala Cys Gly Val  
 35 40 45  
 Cys Pro Gly Lys Leu Arg Gly Val Arg Pro Val Arg Pro Lys Val Leu  
 50 55 60  
 Met Arg Leu Ser Lys Thr Lys Lys His Val Ser Arg Ala Tyr Gly Gly  
 65 70 75 80  
 Ser Met Cys Ala Lys Cys Val Arg Asp Arg Ile Lys Arg Ala Phe Leu  
 85 90 95  
 Ile Glu Glu Gln Lys Ile Ile Val Lys Val Leu Lys Ala Gln Ala Gln  
 100 105 110  
 Ser Gln Lys Ala Lys  
 115

<210> 79

<211> 614  
 <212> PRT  
 <213> Homo Sapiens

<400> 79

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Arg Ser Gly Gln Pro Arg Ala Glu Gly Leu Gly Ala Gly Ala Ala Gly
 1      5      10      15
Pro Leu Arg Ala Met Ala Ala Pro Val Lys Gly Asn Arg Lys Gln Ser
 20      25      30
Thr Glu Gly Asp Ala Leu Asp Pro Pro Ala Ser Pro Lys Pro Ala Gly
 35      40      45
Lys Gln Asn Gly Ile Gln Asn Pro Ile Ser Leu Glu Asp Ser Pro Glu
 50      55      60
Ala Gly Gly Glu Arg Glu Glu Glu Gln Glu Arg Glu Glu Glu Gln Ala
 65      70      75      80
Phe Leu Val Ser Leu Tyr Lys Phe Met Lys Glu Arg His Thr Pro Ile
 85      90      95
Glu Arg Val Pro His Leu Gly Phe Lys Gln Ile Asn Leu Trp Lys Ile
 100     105     110
Tyr Lys Ala Val Glu Lys Leu Gly Ala Tyr Glu Leu Val Thr Gly Arg
 115     120     125
Arg Leu Trp Lys Asn Val Tyr Asp Glu Leu Gly Gly Ser Pro Gly Ser
 130     135     140
Thr Ser Ala Ala Thr Cys Thr Arg Arg His Tyr Glu Arg Leu Val Leu
 145     150     155     160
Pro Tyr Val Arg His Leu Lys Gly Glu Asp Asp Lys Pro Leu Pro Thr
 165     170     175
Ser Lys Pro Arg Lys Gln Tyr Lys Met Ala Lys Glu Asn Arg Gly Asp
 180     185     190
Asp Gly Ala Thr Glu Arg Pro Lys Lys Ala Lys Glu Glu Arg Arg Met
 195     200     205
Asp Gln Met Met Pro Gly Lys Thr Lys Ala Asp Ala Ala Asp Pro Ala
 210     215     220
Pro Leu Pro Ser Gln Glu Pro Pro Arg Asn Ser Thr Glu Gln Gln Gly
 225     230     235     240
Leu Ala Ser Gly Ser Ser Val Ser Phe Val Gly Ala Ser Gly Cys Pro
 245     250     255
Glu Ala Tyr Lys Arg Leu Leu Ser Ser Phe Tyr Cys Lys Gly Thr His
 260     265     270
Gly Ile Met Ser Pro Leu Ala Lys Lys Lys Leu Leu Ala Gln Val Ser
 275     280     285
Lys Val Glu Ala Leu Gln Cys Gln Glu Glu Gly Cys Arg His Gly Ala
 290     295     300
Glu Pro Gln Ala Ser Pro Ala Val His Leu Pro Glu Ser Pro Gln Ser
 305     310     315     320
Pro Lys Gly Leu Thr Glu Asn Ser Arg His Arg Leu Thr Pro Gln Glu
 325     330     335
Gly Leu Gln Ala Pro Gly Gly Ser Leu Arg Glu Glu Ala Gln Ala Gly
 340     345     350
Pro Cys Pro Ala Ala Pro Ile Phe Lys Gly Cys Phe Tyr Thr His Pro
 355     360     365
Thr Glu Val Leu Lys Pro Val Ser Gln His Pro Arg Asp Phe Phe Ser
 370     375     380
Arg Leu Lys Asp Gly Val Leu Leu Gly Pro Pro Gly Lys Glu Gly Leu
 385     390     395     400

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Ser Val Lys Glu Pro Gln Leu Val Trp Gly Gly Asp Ala Asn Arg Pro  
 405 410 415  
 Ser Ala Phe His Lys Gly Gly Ser Arg Lys Gly Ile Leu Tyr Pro Lys  
 420 425 430  
 Pro Lys Ala Cys Trp Val Ser Pro Met Ala Lys Val Pro Ala Glu Ser  
 435 440 445  
 Pro Thr Leu Pro Pro Thr Phe Pro Ser Ser Pro Gly Leu Gly Ser Lys  
 450 455 460  
 Arg Ser Leu Glu Glu Glu Gly Ala Ala His Ser Gly Lys Arg Leu Arg  
 465 470 475 480  
 Ala Val Ser Pro Phe Leu Lys Glu Ala Asp Ala Lys Lys Cys Gly Ala  
 485 490 495  
 Lys Pro Ala Gly Ser Gly Leu Val Ser Cys Leu Leu Gly Pro Ala Leu  
 500 505 510  
 Gly Pro Val Pro Pro Glu Ala Tyr Arg Gly Thr Met Leu His Cys Pro  
 515 520 525  
 Leu Asn Phe Thr Gly Thr Pro Gly Pro Leu Lys Gly Gln Ala Ala Leu  
 530 535 540  
 Pro Phe Ser Pro Leu Val Ile Pro Ala Phe Pro Ala His Phe Leu Ala  
 545 550 555 560  
 Thr Ala Gly Pro Ser Pro Met Ala Ala Gly Leu Met His Phe Pro Pro  
 565 570 575  
 Thr Ser Phe Asp Ser Ala Leu Arg His Arg Leu Cys Pro Ala Ser Ser  
 580 585 590  
 Ala Trp His Ala Pro Pro Val Thr Thr Tyr Ala Ala Pro His Phe Phe  
 595 600 605  
 His Leu Asn Thr Lys Leu  
 610

<210> 80  
 <211> 114  
 <212> PRT  
 <213> Homo Sapiens

<400> 80  
 Met Ala Ser Val Ser Glu Leu Ala Cys Ile Tyr Ser Ala Leu Ile Leu  
 1 5 10 15  
 His Asp Asp Glu Val Thr Val Thr Glu Asp Lys Ile Asn Ala Leu Ile  
 20 25 30  
 Lys Ala Ala Gly Val Asn Val Glu Pro Phe Trp Pro Gly Leu Phe Ala  
 35 40 45  
 Lys Ala Leu Ala Asn Val Asn Ile Gly Ser Leu Ile Cys Asn Val Gly  
 50 55 60  
 Ala Gly Gly Pro Ala Pro Ala Ala Gly Ala Ala Pro Ala Gly Gly Pro  
 65 70 75 80  
 Ala Pro Ser Thr Ala Ala Ala Pro Ala Glu Glu Lys Lys Val Glu Ala  
 85 90 95  
 Lys Lys Glu Glu Ser Glu Glu Ser Asp Asp Asp Met Gly Phe Gly Leu  
 100 105 110  
 Phe Asp

<210> 81  
 <211> 596  
 <212> PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 81

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Met Arg Arg Ala His Glu Gly Arg Glu Ile Pro Ser Leu Gly Gly Ala
1      5      10      15
Arg Arg Arg Glu Val Leu Gln Ala Gly Arg Ser Gln Arg Ala Ala Gly
20     25     30
Arg Arg Arg Arg Arg Gln Glu Leu Glu Leu Gly Val Gly Ser Gly Arg
35     40     45
Pro Gly Gly Pro Pro Pro Gly Pro Gly Arg Arg Gly Thr Cys Ala Ala
50     55     60
Ala Leu Pro Pro Glu Trp Pro Arg Arg Arg Thr Gly Leu Pro Arg Arg
65     70     75     80
Gly Pro Arg Pro Pro Leu Ala Met Ala Lys Trp Leu Asn Lys Tyr Phe
85     90     95
Ser Leu Gly Asn Ser Lys Thr Lys Ser Pro Pro Gln Pro Pro Arg Pro
100    105    110
Asp Tyr Arg Glu Gln Arg Arg Arg Gly Glu Arg Pro Ser Gln Pro Pro
115    120    125
Gln Ala Val Pro Gln Ala Ser Ser Ala Ala Ser Ala Ser Cys Gly Pro
130    135    140
Ala Thr Ala Ser Cys Phe Ser Ala Ser Ser Gly Ser Leu Pro Asp Asp
145    150    155    160
Ser Gly Ser Thr Ser Asp Leu Ile Arg Ala Tyr Arg Ala Gln Lys Glu
165    170    175
Arg His Phe Gln Asp Pro Tyr Asn Gly Pro Gly Ser Ser Leu Arg Lys
180    185    190
Leu Arg Ala Met Cys Arg Leu Asp Tyr Cys Gly Gly Ser Gly Glu Pro
195    200    205
Gly Gly Val Gln Arg Ala Phe Ser Ala Ser Ser Ala Ser Gly Ala Ala
210    215    220
Gly Cys Cys Cys Ala Ser Ser Gly Ala Gly Ala Ala Ala Ser Ser Ser
225    230    235    240
Ser Ser Ser Gly Ser Pro His Leu Tyr Arg Ser Ser Ser Glu Arg Arg
245    250    255
Pro Ala Thr Pro Ala Glu Val Arg Tyr Ile Ser Pro Lys His Arg Leu
260    265    270
Ile Lys Val Glu Ser Ala Ala Gly Gly Gly Ala Gly Asp Pro Leu Gly
275    280    285
Gly Ala Cys Ala Gly Gly Arg Thr Trp Ser Pro Thr Ala Cys Gly Gly
290    295    300
Lys Lys Leu Leu Asn Lys Cys Ala Ala Ser Ala Ala Glu Glu Ser Gly
305    310    315    320
Ala Gly Lys Lys Asp Lys Val Thr Ile Ala Asp Asp Tyr Ser Asp Pro
325    330    335
Phe Asp Ala Lys Asn Asp Leu Lys Ser Lys Ala Gly Lys Gly Glu Ser
340    345    350
Ala Gly Tyr Met Glu Pro Tyr Glu Ala Gln Arg Ile Met Thr Glu Phe
355    360    365
Gln Arg Gln Glu Ser Val Arg Ser Gln His Lys Gly Ile Gln Leu Tyr
370    375    380
Asp Thr Pro Tyr Glu Pro Glu Gly Gln Ser Val Asp Ser Asp Ser Glu
385    390    395    400
Ser Thr Val Ser Pro Arg Leu Arg Glu Ser Lys Leu Pro Gln Asp Asp
405    410    415

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Asp Arg Pro Ala Asp Glu Tyr Asp Gln Pro Trp Glu Trp Asn Arg Val  
 420 425 430  
 Thr Ser Pro Ala Leu Ala Ala Gln Phe Asn Gly Asn Glu Lys Arg Gln  
 435 440 445  
 Ser Ser Pro Ser Pro Ser Arg Asp Arg Arg Arg Gln Leu Arg Ala Pro  
 450 455 460  
 Gly Gly Gly Phe Lys Pro Ile Lys His Gly Ser Pro Glu Phe Cys Gly  
 465 470 475 480  
 Ile Leu Gly Glu Arg Val Asp Pro Ala Val Pro Leu Glu Lys Gln Ile  
 485 490 495  
 Trp Tyr His Gly Ala Ile Ser Arg Gly Asp Ala Glu Asn Leu Leu Arg  
 500 505 510  
 Leu Cys Lys Glu Cys Ser Tyr Leu Val Arg Asn Ser Gln Thr Ser Lys  
 515 520 525  
 His Asp Tyr Pro Leu Ser Leu Arg Ser Asn Gln Gly Phe Met His Met  
 530 535 540  
 Lys Leu Ala Lys Thr Lys Glu Lys Tyr Val Leu Gly Gln Asn Ser Pro  
 545 550 555 560  
 Pro Phe Asp Ser Val Pro Glu Val Ile His Tyr Tyr Thr Thr Arg Lys  
 565 570 575  
 Leu Pro Ile Lys Gly Ala Glu His Leu Ser Leu Leu Tyr Pro Val Ala  
 580 585 590  
 Val Arg Thr Leu  
 595

&lt;210&gt; 82

&lt;211&gt; 207

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 82

Met Ser Pro Leu Leu Arg Arg Leu Leu Leu Ala Ala Leu Leu Gln Leu  
 1 5 10 15  
 Ala Pro Ala Gln Ala Pro Val Ser Gln Pro Asp Ala Pro Gly His Gln  
 20 25 30  
 Arg Lys Val Val Ser Trp Ile Asp Val Tyr Thr Arg Ala Thr Cys Gln  
 35 40 45  
 Pro Arg Glu Val Val Val Pro Leu Thr Val Glu Leu Met Gly Thr Val  
 50 55 60  
 Ala Lys Gln Leu Val Pro Ser Cys Val Thr Val Gln Arg Cys Gly Gly  
 65 70 75 80  
 Cys Cys Pro Asp Asp Gly Leu Glu Cys Val Pro Thr Gly Gln His Gln  
 85 90 95  
 Val Arg Met Gln Ile Leu Met Ile Arg Tyr Pro Ser Ser Gln Leu Gly  
 100 105 110  
 Glu Met Ser Leu Glu Glu His Ser Gln Cys Glu Cys Arg Pro Lys Lys  
 115 120 125  
 Lys Asp Ser Ala Val Lys Pro Asp Arg Ala Ala Thr Pro His His Arg  
 130 135 140  
 Pro Gln Pro Arg Ser Val Pro Gly Trp Asp Ser Ala Pro Gly Ala Pro  
 145 150 155 160  
 Ser Pro Ala Asp Ile Thr His Pro Thr Pro Ala Pro Gly Pro Ser Ala  
 165 170 175  
 His Ala Ala Pro Ser Thr Thr Ser Ala Leu Thr Pro Gly Pro Ala Ala  
 180 185 190

Ala Ala Ala Asp Ala Ala Ala Ser Ser Val Ala Lys Gly Gly Ala  
 195 200 205

<210> 83  
 <211> 429  
 <212> PRT  
 <213> Homo Sapiens

<400> 83  
 Glu Cys Asp Val Met Thr Tyr Val Arg Glu Thr Cys Gly Cys Cys Asp  
 1 5 10 15  
 Cys Glu Lys Arg Cys Gly Ala Leu Asp Val Val Phe Val Ile Asp Ser  
 20 25 30  
 Ser Glu Ser Ile Gly Tyr Thr Asn Phe Thr Leu Glu Lys Asn Phe Val  
 35 40 45  
 Ile Asn Val Val Asn Arg Leu Gly Ala Ile Ala Lys Asp Pro Lys Ser  
 50 55 60  
 Glu Thr Gly Thr Arg Val Gly Val Val Gln Tyr Ser His Glu Gly Thr  
 65 70 75 80  
 Phe Glu Ala Ile Gln Leu Asp Asp Glu His Ile Asp Ser Leu Ser Ser  
 85 90 95  
 Phe Lys Glu Ala Val Lys Asn Leu Glu Trp Ile Ala Gly Gly Thr Trp  
 100 105 110  
 Thr Pro Ser Ala Leu Lys Phe Ala Tyr Asp Arg Leu Ile Lys Glu Ser  
 115 120 125  
 Arg Arg Gln Lys Thr Arg Val Phe Ala Val Val Ile Thr Asp Gly Arg  
 130 135 140  
 His Asp Pro Arg Asp Asp Asp Leu Asn Leu Arg Ala Leu Cys Asp Arg  
 145 150 155 160  
 Asp Val Thr Val Thr Ala Ile Gly Ile Gly Asp Met Phe His Glu Lys  
 165 170 175  
 His Glu Ser Glu Asn Leu Tyr Ser Ile Ala Cys Asp Lys Pro Gln Gln  
 180 185 190  
 Val Arg Asn Met Thr Leu Phe Ser Asp Leu Val Ala Glu Lys Phe Ile  
 195 200 205  
 Asp Asp Met Glu Asp Val Leu Cys Pro Asp Pro Gln Ile Val Cys Pro  
 210 215 220  
 Asp Leu Pro Cys Gln Thr Glu Leu Ser Val Ala Gln Cys Thr Gln Arg  
 225 230 235 240  
 Pro Val Asp Ile Val Phe Leu Leu Asp Gly Ser Glu Arg Leu Gly Glu  
 245 250 255  
 Gln Asn Phe His Lys Ala Arg Arg Phe Val Glu Gln Val Ala Arg Arg  
 260 265 270  
 Leu Thr Leu Ala Arg Arg Asp Asp Asp Pro Leu Asn Ala Arg Val Ala  
 275 280 285  
 Leu Leu Gln Phe Gly Gly Pro Gly Glu Gln Gln Val Ala Phe Pro Leu  
 290 295 300  
 Ser His Asn Leu Thr Ala Ile His Glu Ala Leu Glu Thr Thr Gln Tyr  
 305 310 315 320  
 Leu Asn Ser Phe Ser His Val Gly Ala Gly Val Val His Ala Ile Asn  
 325 330 335  
 Ala Ile Val Arg Ser Pro Arg Gly Gly Ala Arg Arg His Ala Glu Leu  
 340 345 350  
 Ser Phe Val Phe Leu Thr Asp Gly Val Thr Gly Asn Asp Ser Leu His  
 355 360 365

Glu Ser Ala His Ser Met Arg Asn Glu Asn Val Val Pro Thr Val Leu  
 370 375 380  
 Ala Leu Gly Ser Asp Val Asp Met Asp Val Leu Thr Thr Leu Ser Leu  
 385 390 395 400  
 Gly Asp Arg Ala Ala Val Phe His Glu Lys Asp Tyr Asp Ser Leu Ala  
 405 410 415  
 Gln Pro Gly Phe Phe Asp Arg Phe Ile Arg Trp Ile Cys  
 420 425

<210> 84  
 <211> 113  
 <212> PRT  
 <213> Homo Sapiens

<400> 84  
 Met Ser Ala Ser Val Val Ser Val Ile Ser Arg Phe Leu Glu Glu Tyr  
 1 5 10 15  
 Leu Ser Ser Thr Pro Gln Arg Leu Lys Leu Leu Asp Ala Tyr Leu Leu  
 20 25 30  
 Tyr Ile Leu Leu Thr Gly Ala Leu Gln Phe Gly Tyr Cys Leu Leu Val  
 35 40 45  
 Gly Thr Phe Pro Phe Asn Ser Phe Leu Ser Gly Phe Ile Ser Cys Val  
 50 55 60  
 Gly Ser Phe Ile Leu Ala Val Cys Leu Arg Ile Gln Ile Asn Pro Gln  
 65 70 75 80  
 Asn Lys Ala Asp Phe Gln Gly Ile Ser Pro Glu Arg Ala Phe Ala Asp  
 85 90 95  
 Phe Leu Phe Ala Ser Thr Ile Leu His Leu Val Val Met Asn Phe Val  
 100 105 110  
 Gly

<210> 85  
 <211> 258  
 <212> PRT  
 <213> Homo Sapiens

<400> 85  
 Met Ile Asn Ile Glu Ser Met Asp Thr Asp Lys Asp Asp Pro His Gly  
 1 5 10 15  
 Arg Leu Glu Tyr Thr Glu His Gln Gly Arg Ile Lys Asn Ala Arg Glu  
 20 25 30  
 Ala His Ser Gln Ile Glu Lys Arg Arg Arg Asp Lys Met Asn Ser Phe  
 35 40 45  
 Ile Asp Glu Leu Ala Ser Leu Val Pro Thr Cys Asn Ala Met Ser Arg  
 50 55 60  
 Lys Leu Asp Lys Leu Thr Val Leu Arg Met Ala Val Gln His Met Lys  
 65 70 75 80  
 Thr Leu Arg Gly Ala Thr Asn Pro Tyr Thr Glu Ala Asn Tyr Lys Pro  
 85 90 95  
 Thr Phe Leu Ser Asp Asp Glu Leu Lys His Leu Ile Leu Arg Ala Ala  
 100 105 110  
 Asp Gly Phe Leu Phe Val Val Gly Cys Asp Arg Gly Lys Ile Leu Phe  
 115 120 125  
 Val Ser Glu Ser Val Phe Lys Ile Leu Asn Tyr Ser Gln Asn Asp Leu

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      130              135              140
Ile Gly Gln Ser Leu Phe Asp Tyr Leu His Pro Lys Asp Ile Ala Lys
145              150              155              160
Val Lys Glu Gln Leu Ser Ser Ser Asp Thr Ala Pro Arg Glu Arg Leu
      165              170              175
Ile Asp Ala Lys Thr Gly Leu Pro Val Lys Thr Asp Ile Thr Pro Gly
      180              185              190
Pro Ser Arg Leu Cys Ser Gly Ala Arg Arg Ser Phe Phe Cys Arg Met
      195              200              205
Lys Cys Asn Arg Pro Ser Val Asn Val Glu Asp Lys Asn Phe Pro Ser
      210              215              220
Thr Cys Ser Lys Lys Lys Ala Asp Arg Lys Ala Phe Cys Thr Ile His
225              230              235              240
Ser Thr Gly Tyr Phe Gly Ile Phe Thr Thr Arg Thr Ser Arg His Ile
      245              250              255
Val Leu

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<210> 86  
 <211> 569  
 <212> PRT  
 <213> Homo Sapiens

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      <400> 86
Met Ser Thr Met Val Tyr Ile Lys Glu Asp Lys Leu Glu Lys Leu Thr
  1              5              10              15
Gln Asp Glu Ile Ile Ser Lys Thr Lys Gln Val Ile Gln Gly Leu Glu
      20              25              30
Ala Leu Lys Asn Glu His Asn Ser Ile Leu Gln Ser Leu Leu Glu Thr
      35              40              45
Leu Lys Cys Leu Lys Lys Asp Asp Glu Ser Asn Leu Val Glu Glu Lys
      50              55              60
Ser Asn Met Ile Arg Lys Ser Leu Glu Met Leu Glu Leu Gly Leu Ser
      65              70              75              80
Glu Ala Gln Val Met Met Ala Leu Ser Asn His Leu Asn Ala Val Glu
      85              90              95
Ser Glu Lys Gln Lys Leu Arg Ala Gln Val Arg Arg Leu Cys Gln Glu
      100              105              110
Asn Gln Trp Leu Arg Asp Glu Leu Ala Asn Thr Gln Gln Lys Leu Gln
      115              120              125
Lys Ser Glu Gln Ser Val Ala Gln Leu Glu Glu Glu Lys Lys His Leu
      130              135              140
Glu Phe Met Asn Gln Leu Lys Lys Tyr Asp Asp Asp Ile Ser Pro Ser
145              150              155              160
Glu Asp Lys Asp Thr Asp Ser Thr Lys Glu Pro Leu Asp Asp Leu Phe
      165              170              175
Pro Asn Asp Glu Asp Asp Pro Gly Gln Gly Ile Gln Gln Gln His Ser
      180              185              190
Ser Ala Ala Ala Ala Ala Gln Gln Gly Gly Tyr Glu Ile Pro Ala Arg
      195              200              205
Leu Arg Thr Leu His Asn Leu Val Ile Gln Tyr Ala Ser Gln Gly Arg
      210              215              220
Tyr Glu Val Ala Val Pro Leu Cys Lys Gln Ala Leu Glu Asp Leu Glu
225              230              235              240
Lys Thr Ser Gly His Asp His Pro Asp Val Ala Thr Met Leu Asn Ile

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245 250 255  
 Leu Ala Leu Val Tyr Arg Asp Gln Asn Lys Tyr Lys Asp Ala Ala Asn  
 260 265 270  
 Leu Leu Asn Asp Ala Leu Ala Ile Arg Glu Lys Thr Leu Gly Lys Asp  
 275 280 285  
 His Pro Ala Val Ala Ala Thr Leu Asn Asn Leu Ala Val Leu Tyr Gly  
 290 295 300  
 Lys Arg Gly Lys Tyr Lys Glu Ala Glu Pro Leu Cys Lys Arg Ala Leu  
 305 310 315 320  
 Glu Ile Arg Glu Lys Val Leu Gly Lys Asp His Pro Asp Val Ala Lys  
 325 330 335  
 Gln Leu Asn Asn Leu Ala Leu Leu Cys Gln Asn Gln Gly Lys Tyr Glu  
 340 345 350  
 Glu Val Glu Tyr Tyr Tyr Gln Arg Ala Leu Glu Ile Tyr Gln Thr Lys  
 355 360 365  
 Leu Gly Pro Asp Asp Pro Asn Val Ala Lys Thr Lys Asn Asn Leu Ala  
 370 375 380  
 Ser Cys Tyr Leu Lys Gln Gly Lys Phe Lys Gln Ala Glu Thr Leu Tyr  
 385 390 395 400  
 Lys Glu Ile Leu Thr Arg Ala His Glu Arg Glu Phe Gly Ser Val Asp  
 405 410 415  
 Asp Glu Asn Lys Pro Ile Trp Met His Ala Glu Glu Arg Glu Glu Cys  
 420 425 430  
 Lys Gly Lys Gln Lys Asp Gly Thr Ser Phe Gly Glu Tyr Gly Gly Trp  
 435 440 445  
 Tyr Lys Ala Cys Lys Val Asp Ser Pro Thr Val Thr Thr Thr Leu Lys  
 450 455 460  
 Asn Leu Gly Ala Leu Tyr Arg Arg Gln Gly Lys Phe Glu Ala Ala Glu  
 465 470 475 480  
 Thr Leu Glu Glu Ala Ala Met Arg Ser Arg Lys Gln Gly Leu Asp Asn  
 485 490 495  
 Val His Lys Gln Arg Val Ala Glu Val Leu Asn Asp Pro Glu Asn Met  
 500 505 510  
 Glu Lys Arg Arg Ser Arg Glu Ser Leu Asn Val Asp Val Val Lys Tyr  
 515 520 525  
 Glu Ser Gly Pro Asp Gly Gly Glu Glu Val Ser Met Ser Val Glu Trp  
 530 535 540  
 Asn Gly Gly Val Ser Gly Arg Ala Ser Phe Cys Gly Lys Arg Gln Gln  
 545 550 555 560  
 Gln Gln Trp Pro Gly Arg Arg His Arg  
 565

&lt;210&gt; 87

&lt;211&gt; 736

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 87

Met Glu Ala Leu Ile Pro Val Ile Asn Lys Leu Gln Asp Val Phe Asn  
 1 5 10 15  
 Thr Val Gly Ala Asp Ile Ile Gln Leu Pro Gln Ile Val Val Val Gly  
 20 25 30  
 Thr Gln Ser Ser Gly Lys Ser Ser Val Leu Glu Ser Leu Val Gly Arg  
 35 40 45  
 Asp Leu Leu Pro Arg Gly Thr Gly Ile Val Thr Arg Arg Pro Leu Ile

50	55	60
Leu Gln Leu Val His Val Thr Gln Glu Asp Lys Arg Lys Thr Thr Gly		
65	70	75
Glu Glu Asn Gly Val Glu Ala Glu Glu Trp Gly Lys Phe Leu His Thr		80
	85	90
Lys Asn Lys Leu Tyr Thr Asp Phe Asp Glu Ile Arg Gln Glu Ile Glu		95
	100	105
Asn Glu Thr Glu Arg Ile Ser Gly Asn Asn Lys Gly Val Ser Pro Glu		110
	115	120
Pro Ile His Leu Lys Ile Phe Ser Pro Asn Val Val Asn Leu Thr Leu		125
	130	135
Val Asp Leu Pro Gly Met Thr Lys Val Pro Val Gly Asp Gln Pro Lys		140
145	150	155
Asp Ile Glu Leu Gln Ile Arg Glu Leu Ile Leu Arg Phe Ile Ser Asn		160
	165	170
Pro Asn Ser Ile Ile Leu Ala Val Thr Ala Ala Asn Thr Asp Met Ala		175
	180	185
Thr Ser Glu Ala Leu Lys Ile Ser Arg Glu Val Asp Pro Asp Gly Arg		190
	195	200
Arg Thr Leu Ala Val Ile Thr Lys Leu Asp Leu Met Asp Ala Gly Thr		205
	210	215
Asp Ala Met Asp Val Leu Met Gly Arg Val Ile Pro Val Lys Leu Gly		220
225	230	235
Ile Ile Gly Val Val Asn Arg Ser Gln Leu Asp Ile Asn Asn Lys Lys		240
	245	250
Ser Val Thr Asp Ser Ile Arg Asp Glu Tyr Ala Phe Leu Gln Lys Lys		255
	260	265
Tyr Pro Ser Leu Ala Asn Arg Asn Gly Thr Lys Tyr Leu Ala Arg Thr		270
	275	280
Leu Asn Arg Leu Leu Met His His Ile Arg Asp Cys Leu Pro Glu Leu		285
	290	295
Lys Thr Arg Ile Asn Val Leu Ala Ala Gln Tyr Gln Ser Leu Leu Asn		300
305	310	315
Ser Tyr Gly Glu Pro Val Asp Asp Lys Ser Ala Thr Leu Leu Gln Leu		320
	325	330
Ile Thr Lys Phe Ala Thr Glu Tyr Cys Asn Thr Ile Glu Gly Thr Ala		335
	340	345
Lys Tyr Ile Glu Thr Ser Glu Leu Cys Gly Gly Ala Arg Ile Cys Tyr		350
	355	360
Ile Phe His Glu Thr Phe Gly Arg Thr Leu Glu Ser Val Asp Pro Leu		365
	370	375
Gly Gly Leu Asn Thr Ile Asp Ile Leu Thr Ala Ile Arg Asn Ala Thr		380
385	390	395
Gly Pro Arg Pro Ala Leu Phe Val Pro Glu Val Ser Phe Glu Leu Leu		400
	405	410
Val Lys Arg Gln Ile Lys Arg Leu Glu Glu Pro Ser Leu Arg Cys Val		415
	420	425
Glu Leu Val His Glu Glu Met Gln Arg Ile Ile Gln His Cys Ser Asn		430
	435	440
Tyr Ser Thr Gln Glu Leu Leu Arg Phe Pro Lys Leu His Asp Ala Ile		445
	450	455
Val Glu Val Val Thr Cys Leu Leu Arg Lys Arg Leu Pro Val Thr Asn		460
465	470	475
Glu Met Val His Asn Leu Val Ala Ile Glu Leu Ala Tyr Ile Asn Thr		480
	485	490
		495

Lys His Pro Asp Phe Ala Asp Ala Cys Gly Leu Met Asn Asn Asn Ile  
                   500                                  505                                  510  
 Glu Glu Gln Arg Arg Asn Arg Leu Ala Arg Glu Leu Pro Ser Ala Val  
                   515                                  520                                  525  
 Ser Arg Asp Lys Ser Ser Lys Val Pro Ser Ala Leu Ala Pro Ala Ser  
                   530                                  535                                  540  
 Gln Glu Pro Ser Pro Ala Ala Ser Ala Glu Ala Asp Gly Lys Leu Ile  
 545                                  550                                  555                                  560  
 Gln Asp Ser Arg Arg Glu Thr Lys Asn Val Ala Ser Gly Gly Gly Gly  
                                   565                                  570                                  575  
 Val Gly Asp Gly Val Gln Glu Pro Thr Thr Gly Asn Trp Arg Gly Met  
                                   580                                  585                                  590  
 Leu Lys Thr Ser Lys Ala Glu Glu Leu Leu Ala Glu Glu Lys Ser Lys  
                                   595                                  600                                  605  
 Pro Ile Pro Ile Met Pro Ala Ser Pro Gln Lys Gly His Ala Val Asn  
 610                                  615                                  620  
 Leu Leu Asp Val Pro Val Pro Val Ala Arg Lys Leu Ser Ala Arg Glu  
 625                                  630                                  635                                  640  
 Gln Arg Asp Cys Glu Val Ile Glu Arg Leu Ile Lys Ser Tyr Phe Leu  
                                   645                                  650                                  655  
 Ile Val Arg Lys Asn Ile Gln Asp Ser Val Pro Lys Ala Val Met His  
                                   660                                  665                                  670  
 Phe Leu Val Asn His Val Lys Asp Thr Leu Gln Ser Glu Leu Val Gly  
                                   675                                  680                                  685  
 Gln Leu Tyr Lys Ser Ser Leu Leu Asp Asp Leu Leu Thr Glu Ser Glu  
                                   690                                  695                                  700  
 Asp Met Ala Gln Arg Arg Lys Glu Ala Ala Asp Met Leu Lys Ala Leu  
 705                                  710                                  715                                  720  
 Gln Gly Ala Ser Gln Ile Ile Ala Glu Ile Arg Glu Thr His Leu Trp  
                                   725                                  730                                  735

<210> 88  
 <211> 37  
 <212> PRT  
 <213> Homo Sapiens

<400> 88  
 Met Gly Asp His Ala Trp Ser Phe Leu Lys Asp Phe Leu Ala Gly Gly  
 1                                  5                                  10                                  15  
 Val Ala Ala Ala Val Ser Lys Thr Ala Val Ala Pro Ile Glu Arg Val  
                                   20                                  25                                  30  
 Lys Leu Leu Leu Gln  
                                   35

<210> 89  
 <211> 1381  
 <212> DNA  
 <213> Homo Sapiens

<400> 89  
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 gcgttcgtgt ccgagttctc tgcaggtcnc tantttcccg gtagttcanc tgcncatgaa 120  
 tanaacagca atgagagccn ctncnaaaga ctttgaaaat tcaactgaatc nagtgaaact 180  
 ctngaaaaag gatccangaa acgaaatgaa nctnaaactc tncgcgctat atnancangc 240  
 cnctgaanga cttgtntcat gcccnaccna ngtgtntttg acttgatcna caagggggcca 300

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atggggacaca  tggaatgccc  ttggcancct  gccnaagaa  ctgccaggca  naactatgtg      360
gatttggtgt  ccantttgan  tccttccttg  gaatcctcna  atcnngtgga  ncctggaaca      420
nacaggaaat  ccactgggtt  tgaaactctg  gtggtgacct  ccgaagatgg  catcacaag      480
atcatgttca  accggcccaa  aaagaaaaat  gccataaaca  ctgagatgta  tcatgaaatt      540
atgcgtgcac  ttaaagctgc  cagcaaggat  gactcaatca  tcaactgttt  aacaggaaat      600
ggtgactatt  acagtagtgg  gaatgatctg  actaacttca  ctgatattcc  ccctggtgga      660
gtagaggaga  aagctaaaaa  taatgccgtt  ttactgaggg  aatttgtggg  ctgttttata      720
gattttccta  agcctctgat  tgcagtggtc  aatgggtccag  ctgtgggcat  ctccgtcacc      780
ctccttgggc  tattcgatgc  cgtgtatgca  tctgacaggg  caacatttca  tacaccattt      840
agtcacctag  gccaaagtcc  ggaaggatgc  tcctcttaca  cttttccgaa  gataatgagc      900
ccagccaagg  caacagagat  gcttattttt  ggaaagaagt  taacagcggg  agaggcatgt      960
gctcaaggac  ttgttactga  agttttccct  gatagcactt  ttcagaaaga  agtctggacc     1020
aggctgaagg  catttgcaaa  gcttccccca  aatgccttga  gaatttcaaa  agaggtaatc     1080
aggaaaagag  agagagaaaa  actacacgct  gttaatgctg  aagaatgcaa  tgctcttcag     1140
ggaagatggc  tatcagatga  atgcacaaat  gctgtggtga  acttcttata  cagaaaatca     1200
aaactgtgat  gaccactaca  gcagagtaaa  gcatgtccaa  ggaaggatgt  gctgttacct     1260
ctgatttcca  gtactggaac  taaataagct  tcattgtgcc  ttttgtagtg  ctagaatatc     1320
aattacaatg  atgatatttc  actacagctc  tgatgaataa  aaagttttgt  aaaacaagaa     1380
a

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&lt;210&gt; 90

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 90

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Thr Cys Met  Pro  Pro Val  Phe Asp Leu Ile Lys Gly Pro Met Gly His
 1              5              10              15
Met Glu Cys  Pro  Trp  Pro Ala Arg Thr Ala Arg Asn Tyr Val Asp Leu
              20              25              30
Val Ser Leu  Pro  Ser Leu Glu Ser Ser Asn Val Pro Gly Thr Arg Lys
              35              40              45
Ser Thr Gly  Phe Glu Thr Leu Val Val Thr Ser Glu Asp Gly Ile Thr
 50              55              60
Lys Ile Met  Phe Asn Arg Pro Lys Lys Lys Asn Ala Ile Asn Thr Glu
65              70              75              80
Met Tyr His  Glu Ile Met Arg Ala Leu Lys Ala Ala Ser Lys Asp Asp
              85              90              95
Ser Ile Ile  Thr Val Leu Thr Gly Asn Gly Asp Tyr Tyr Ser Ser Gly
              100             105             110
Asn Asp Leu  Thr Asn Phe Thr Asp Ile Pro Pro Gly Gly Val Glu Glu
              115             120             125
Lys Ala Lys  Asn Asn Ala Val Leu Leu Arg Glu Phe Val Gly Cys Phe
              130             135             140
Ile Asp Phe  Pro Lys Pro Leu Ile Ala Val Val Asn Gly Pro Ala Val
145             150             155             160
Gly Ile Ser  Val Thr Leu Leu Gly Leu Phe Asp Ala Val Tyr Ala Ser
              165             170             175
Asp Arg Ala  Thr Phe His Thr Pro Phe Ser His Leu Gly Gln Ser Pro
              180             185             190
Glu Gly Cys  Ser Ser Tyr Thr Phe Pro Lys Ile Met Ser Pro Ala Lys
              195             200             205
Ala Thr Glu  Met Leu Ile Phe Gly Lys Lys Leu Thr Ala Gly Glu Ala
              210             215             220
Cys Ala Gln  Leu Val Thr Glu Val Phe Pro Asp Ser Thr Phe Gln Lys

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<210> 91
<211> 1514
<212> DNA
<213> Homo Sapiens
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```
<210> 92
<211> 407
<212> PRT
<213> Homo Sapiens
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<400> 92															
Met	Ser	Ala	Ser	Ser	Leu	Leu	Glu	Gln	Arg	Pro	Lys	Gly	Gln	Gly	Asn
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Lys	Val	Gln	Asn	Gly	Ser	Val	His	Gln	Lys	Asp	Gly	Leu	Asn	Asp	Asp
			20					25					30		
Asp	Phe	Glu	Pro	Tyr	Leu	Ser	Pro	Gln	Ala	Arg	Pro	Asn	Asn	Ala	Tyr
		35					40					45			

Thr Ala Met Ser Asp Ser Tyr Leu Pro Ser Tyr Tyr Ser Pro Ser Ile  
 50 55 60  
 Gly Phe Ser Tyr Ser Leu Gly Glu Ala Ala Trp Ser Thr Gly Gly Asp  
 65 70 75 80  
 Thr Ala Met Pro Tyr Leu Thr Ser Tyr Gly Gln Leu Ser Asn Gly Glu  
 85 90 95  
 Pro His Phe Leu Pro Asp Ala Met Phe Gly Gln Pro Gly Ala Leu Gly  
 100 105 110  
 Ser Thr Pro Phe Leu Gly Gln His Gly Phe Asn Phe Phe Pro Ser Gly  
 115 120 125  
 Ile Asp Phe Ser Ala Trp Gly Asn Asn Ser Ser Gln Gly Gln Ser Thr  
 130 135 140  
 Gln Ser Ser Gly Tyr Ser Ser Asn Tyr Ala Tyr Ala Pro Ser Ser Leu  
 145 150 155 160  
 Gly Gly Ala Met Ile Asp Gly Gln Ser Ala Phe Ala Asn Glu Thr Leu  
 165 170 175  
 Asn Lys Ala Pro Gly Met Asn Thr Ile Asp Gln Gly Met Ala Ala Leu  
 180 185 190  
 Lys Leu Gly Ser Thr Glu Val Ala Ser Asn Val Pro Lys Val Val Gly  
 195 200 205  
 Ser Ala Val Gly Ser Gly Ser Ile Thr Ser Asn Ile Val Ala Ser Asn  
 210 215 220  
 Ser Leu Pro Pro Ala Thr Ile Ala Pro Pro Lys Pro Ala Ser Trp Ala  
 225 230 235 240  
 Asp Ile Ala Ser Lys Pro Ala Lys Gln Gln Pro Lys Leu Lys Thr Lys  
 245 250 255  
 Asn Gly Ile Ala Gly Ser Ser Leu Pro Pro Pro Pro Ile Lys His Asn  
 260 265 270  
 Met Asp Ile Gly Thr Trp Asp Asn Lys Gly Pro Val Ala Lys Ala Pro  
 275 280 285  
 Ser Gln Ala Leu Val Gln Asn Ile Gly Gln Pro Thr Gln Gly Ser Pro  
 290 295 300  
 Gln Pro Val Gly Gln Gln Ala Asn Asn Ser Pro Pro Val Ala Gln Ala  
 305 310 315 320  
 Ser Val Gly Gln Gln Thr Gln Pro Leu Pro Pro Pro Pro Gln Pro  
 325 330 335  
 Ala Gln Leu Ser Val Gln Gln Gln Ala Ala Gln Pro Thr Arg Trp Val  
 340 345 350  
 Ala Pro Arg Asn Arg Gly Ser Gly Phe Gly His Asn Gly Val Asp Gly  
 355 360 365  
 Asn Gly Val Gly Gln Ser Gln Ala Gly Ser Gly Ser Thr Pro Ser Glu  
 370 375 380  
 Pro His Pro Val Leu Glu Lys Leu Arg Ser Ile Asn Asn Tyr Asn Pro  
 385 390 395 400  
 Lys Asp Phe Asp Trp Glu Ile  
 405

&lt;210&gt; 93

&lt;211&gt; 2236

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 93

cctggcccggtcgcgggtcgcgggtccttttccagctcctggcagccggggcacccgaaggaac  
 gggtcgtgcaacgacgcagctggacccatggaccgaaaagtgcccgagaa

60

120

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ttccggcata aggtggattt tctgattgaa aatgatgcag agaaggacta tctctatgat 180
gtgctgcgaa tgtaccacca gaccatggac gtggccgtgc tctgtgggaga cctgaagctg 240
gtcatcaatg aaccagccg tctgcctctg tttgatgccca ttcggccgct gatccactg 300
aagcaccagg tggaatatga tcagctgacc ccccgccgct ccaggaagct gaaggaggtg 360
cgtctggacc gtctgcaccc cgaaggcctc ggccctgagtg tgcgtggtgg cctggagttt 420
ggctgtgggc tcttcatctc ccacctcacc aaaggcggtc aggcagacag cgtcgggctc 480
caggtagggg acgagatcgt ccggatcaat ggatattcca tctctcctg taccatgag 540
gaggtcatca acctcattcg aaccaagaaa actgtgtcca tcaaagttag acacatcggc 600
ctgatccccg tgaaaagctc tcctgatgag cccctcactt ggcagtatgt ggatcagttt 660
gtgtcggaaat ctgggggctg gcgaggcagc ctgggctccc ctggaaatcg ggaaaacaag 720
gagaagaagg tcttcatcag cctggtaggc tcccgaggcc ttggctgcag catttccagc 780
ggccccatcc agaagcctgg catctttatc agccatgtga aacctggctc cctgtctgct 840
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ctggatcaca aggaggctgt aaatgtgctg aaaaatagcc gcagcctgac catctccatt 960
gtagctgcag ctggccggga gctgttcatg acagaccggg agcggctggc agaggcgagg 1020
cagcgtgagc tgcagcggca ggagcttctc atgcagaagc ggctggcgat ggagtccaac 1080
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gcagcagagg aaaatgagag ataccggaag gagatggaac agattgtaga ggaggaagag 1200
aagtttaaga agcaatggga agaagactgg ggctcaaagg aacagctact cttgcctaaa 1260
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gaacctgagc tcgagcccgcc agatgacctg gatggaggca cggaggagca gggagagcag 1380
gatttccgga aatatgagga aggcctttgac cctactcta tgttcacccc agagcagatc 1440
atggggaagg atgtccggct cctacgcac aagaaggagg gatccttaga cctggccctg 1500
gaaggcgggtg tggactcccc cattgggaag gtggtcgttt ctgctgtgta tgagcgggga 1560
gctgctgagc ggcattggtg cattgtgaaa ggggacgaga tcatggcaat caacggcaag 1620
attgtgacag actacaccct ggctgaggct gacgtcgccc tgcagaaggc ctggaatcag 1680
ggcggggact ggatcgacct tgtggttgcc gtctgcccc caaaggagta tgacgatgag 1740
ctgaccttct tgctgaagtc caaaagggga aaccaaatc acgcgttagg aaacagttag 1800
ctccggcccc acctcgtgaa cacaaagcct cggaccagcc ttgagagagg ccacatgaca 1860
cacaccagat ggcattcctt ggacctgaat ctatcaccca ggaatctcaa actccctttg 1920
gccctgaacc agggccagat aaggaacagc tcgggccact tttttgaagg ccaatgtgga 1980
ggaaagggag cagccagccg tttgggagaa gatctcaagg atccagactc tcattccttt 2040
cctctggccc agtgaatttg gtctctccca gctttggggg actccttctc tgaaccctaa 2100
taagacccca ctggagtctc tctctctcca tccctctcct ctgccctctg ctctaattgc 2160
tgccaggatt gtcactccaa accttactct gagctcatta ataaaataaa cagatttatt 2220
ttccagctta aaaaaa
2236

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&lt;210&gt; 94

&lt;211&gt; 652

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 94

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Met Asp Arg Lys Val Ala Arg Glu Phe Arg His Lys Val Asp Phe Leu
1          5          10          15
Ile Glu Asn Asp Ala Glu Lys Asp Tyr Leu Tyr Asp Val Leu Arg Met
20          25          30
Tyr His Gln Thr Met Asp Val Ala Val Leu Val Gly Asp Leu Lys Leu
35          40          45
Val Ile Asn Glu Pro Ser Arg Leu Pro Leu Phe Asp Ala Ile Arg Pro
50          55          60
Leu Ile Pro Leu Lys His Gln Val Glu Tyr Asp Gln Leu Thr Pro Arg
65          70          75          80
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
85          90          95

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Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu  
 100 105 110  
 Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu  
 115 120 125  
 Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser  
 130 135 140  
 Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val  
 145 150 155 160  
 Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro  
 165 170 175  
 Asp Glu Pro Leu Thr Trp Gln Tyr Val Asp Gln Phe Val Ser Glu Ser  
 180 185 190  
 Gly Gly Val Arg Gly Ser Leu Gly Ser Pro Gly Asn Arg Glu Asn Lys  
 195 200 205  
 Glu Lys Lys Val Phe Ile Ser Leu Val Gly Ser Arg Gly Leu Gly Cys  
 210 215 220  
 Ser Ile Ser Ser Gly Pro Ile Gln Lys Pro Gly Ile Phe Ile Ser His  
 225 230 235 240  
 Val Lys Pro Gly Ser Leu Ser Ala Glu Val Gly Leu Glu Ile Gly Asp  
 245 250 255  
 Gln Ile Val Glu Val Asn Gly Val Asp Phe Ser Asn Leu Asp His Lys  
 260 265 270  
 Glu Ala Val Asn Val Leu Lys Asn Ser Arg Ser Leu Thr Ile Ser Ile  
 275 280 285  
 Val Ala Ala Ala Gly Arg Glu Leu Phe Met Thr Asp Arg Glu Arg Leu  
 290 295 300  
 Ala Glu Ala Arg Gln Arg Glu Leu Gln Arg Gln Glu Leu Leu Met Gln  
 305 310 315 320  
 Lys Arg Leu Ala Met Glu Ser Asn Lys Ile Leu Gln Glu Gln Gln Glu  
 325 330 335  
 Met Glu Arg Gln Arg Arg Lys Glu Ile Ala Gln Lys Ala Ala Glu Glu  
 340 345 350  
 Asn Glu Arg Tyr Arg Lys Glu Met Glu Gln Ile Val Glu Glu Glu Glu  
 355 360 365  
 Lys Phe Lys Lys Gln Trp Glu Glu Asp Trp Gly Ser Lys Glu Gln Leu  
 370 375 380  
 Leu Leu Pro Lys Thr Ile Thr Ala Glu Val His Pro Val Pro Leu Arg  
 385 390 395 400  
 Lys Pro Lys Tyr Asp Gln Gly Val Glu Pro Glu Leu Glu Pro Ala Asp  
 405 410 415  
 Asp Leu Asp Gly Gly Thr Glu Glu Gln Gly Glu Gln Asp Phe Arg Lys  
 420 425 430  
 Tyr Glu Glu Gly Phe Asp Pro Tyr Ser Met Phe Thr Pro Glu Gln Ile  
 435 440 445  
 Met Gly Lys Asp Val Arg Leu Leu Arg Ile Lys Lys Glu Gly Ser Leu  
 450 455 460  
 Asp Leu Ala Leu Glu Gly Gly Val Asp Ser Pro Ile Gly Lys Val Val  
 465 470 475 480  
 Val Ser Ala Val Tyr Glu Arg Gly Ala Ala Glu Arg His Gly Gly Ile  
 485 490 495  
 Val Lys Gly Asp Glu Ile Met Ala Ile Asn Gly Lys Ile Val Thr Asp  
 500 505 510  
 Tyr Thr Leu Ala Glu Ala Asp Ala Ala Leu Gln Lys Ala Trp Asn Gln  
 515 520 525  
 Gly Gly Asp Trp Ile Asp Leu Val Val Ala Val Cys Pro Pro Lys Glu

530 535 540  
 Tyr Asp Asp Glu Leu Thr Phe Leu Leu Lys Ser Lys Arg Gly Asn Gln  
 545 550 555 560  
 Ile His Ala Leu Gly Asn Ser Glu Leu Arg Pro His Leu Val Asn Thr  
 565 570 575  
 Lys Pro Arg Thr Ser Leu Glu Arg Gly His Met Thr His Thr Arg Trp  
 580 585 590  
 His Pro Trp Asp Leu Asn Leu Ser Pro Arg Asn Leu Lys Leu Pro Leu  
 595 600 605  
 Ala Leu Asn Gln Gly Gln Ile Arg Asn Ser Ser Gly His Phe Phe Glu  
 610 615 620  
 Gly Gln Cys Gly Gly Lys Gly Ala Ala Ser Arg Leu Gly Glu Asp Leu  
 625 630 635 640  
 Lys Asp Pro Asp Ser His Ser Phe Pro Leu Ala Gln  
 645 650

<210> 95  
 <211> 831  
 <212> DNA  
 <213> Homo Sapiens

<400> 95  
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 agaaaccaca atgcccagat ctcaagtaga tgaagagttt ttgaagcaaa gtttaaagga 120  
 aaaacnattg cagaaaacat ttagattnta tgaaatatat aatnanancc aaaanccatt 180  
 tgaanttaat nganccttac ctgtcntcac taaatcaggg ttntctgcgc caccnaaggg 240  
 cngcccancg cctgctgtgt tggcttanta ggcctnagca tangggcagn tgcaatcctt 300  
 tctctctnng gcggcanatg ggcttctgga anaacccttn ccttatcccc ancgcaaggc 360  
 ggccccctccc ctgcccnaa aggaaacctc ntggacncag ggaatatang gccaccttga 420  
 aggggtggact ggctatcntg gaagatcaga taccaccaag caatttggag acagtctctg 480  
 ttgagaataa ccacggtttc catgaaaaga cagcagcgct gaagcttgag gccgagggcg 540  
 aggccatgga agatgcagcc gcgccaggga acgaccgagg cggcacacag gagccagccc 600  
 cagtgcctgc tgagccgttt gacaacacta cctacaagaa cctgcagcat catgactaca 660  
 gcacgtacac cttcttagac ctcaacctcg aactctcaaa attcaggatg cctcagccct 720  
 cctcaggccg ggagtcacct cgacactgag ggccctcggt gtgaagatga accttccacc 780  
 gtcttctactg catcctggag tgcaaaaata aaatccactc aagagtcaaa a 831

<210> 96  
 <211> 184  
 <212> PRT  
 <213> Homo Sapiens

<400> 96  
 Arg Lys Asn Cys Arg Lys His Leu Asp Met Lys Tyr Ile Lys His Leu  
 1 5 10 15  
 Leu Pro Tyr Leu Ser Ser Leu Asn Gln Gly Leu Arg His Arg Ala Ala  
 20 25 30  
 Arg Leu Leu Cys Trp Leu Arg Pro His Gly Cys Asn Pro Phe Leu Leu  
 35 40 45  
 Arg Met Gly Phe Trp Asn Pro Leu Ile Pro Ala Arg Arg Pro Leu Pro  
 50 55 60  
 Cys Pro Arg Lys Pro Gly Arg Glu Tyr Ala Thr Leu Lys Gly Gly Leu  
 65 70 75 80  
 Ala Ile Glu Asp Gln Ile Pro Pro Ser Asn Leu Glu Thr Val Pro Val  
 85 90 95

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<210> 97
<211> 1008
<212> DNA
<213> Homo Sapiens
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<210> 98
<211> 312
<212> PRT
<213> Homo Sapiens
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-67-

Asn Phe Leu Ser Glu Asp Lys Tyr Pro Leu Ile Ile Val Ser Glu Ile  
                   100                  105                  110  
 Glu Tyr Leu Leu Lys Lys Leu Thr Glu Ala Met Gly Gly Trp Gln  
                   115                  120                  125  
 Gln Glu Gln Phe Glu His Tyr Lys Ile Asn Phe Asp Asp Ser Lys Asn  
                   130                  135                  140  
 Gly Leu Ser Ala Trp Glu Leu Ile Glu Leu Ile Gly Asn Gly Gln Phe  
 145                  150                  155                  160  
 Ser Lys Gly Met Asp Arg Gln Thr Val Ser Met Ala Ile Asn Glu Val  
                   165                  170                  175  
 Phe Asn Glu Leu Ile Leu Asp Val Leu Lys Gln Gly Tyr Met Met Lys  
                   180                  185                  190  
 Lys Gly His Arg Arg Lys Asn Trp Thr Glu Arg Trp Phe Val Leu Lys  
                   195                  200                  205  
 Pro Asn Ile Ile Ser Tyr Tyr Val Ser Glu Asp Leu Lys Asp Lys Lys  
                   210                  215                  220  
 Gly Asp Ile Leu Leu Asp Glu Asn Cys Cys Val Glu Ser Leu Pro Asp  
 225                  230                  235                  240  
 Lys Asp Gly Lys Lys Cys Leu Phe Leu Val Lys Cys Phe Asp Lys Thr  
                   245                  250                  255  
 Phe Glu Ile Ser Ala Ser Asp Lys Lys Gln Glu Trp Ile Gln Ala Ile  
                   260                  265                  270  
 His Ser Thr Ile His Leu Leu Lys Leu Ser Pro Pro Pro Lys Glu Ala  
                   275                  280                  285  
 Gln Leu Leu Lys Leu Arg Asn His Leu Ala Glu Gln Glu Leu Glu Arg  
                   290                  295                  300  
 Gln Met Glu Leu Gln Ala Arg Gln  
 305                  310

&lt;210&gt; 99

&lt;211&gt; 1009

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 99

ggctaagtga	acataactcta	ccacttggtc	tgaagcccag	cagtatctga	tggaataatcc	60
aacttttgca	gaagatgagg	agttacaaaa	tatggacaaa	gaagatgcat	taatttgctt	120
tgaagaacac	attcgggctt	tagaaaagga	ggaagaagaa	gaaaaacaga	agagtttgct	180
gagagaaaag	agacgacagc	gaaaaaatag	ggaatctttc	cagatatttt	tagatgaatt	240
acatgaacat	ggacaactgc	attctatgtc	atcttggatg	gaattgtatc	caactattag	300
ttctgatatt	agattcacta	atatgcttgg	tcagcctgga	tcaactgcac	ttgatctttt	360
caagttttat	gttgaggatc	ttaaagcacg	ttatcatgac	gagaagaaga	taataaaaaga	420
cattctaaag	gataaaggat	ttgtagttga	agtaaactac	acttttgaag	attttggtgc	480
gataatcagt	tcaactaaaa	gatcaactac	attagatgct	ggaaatatca	aattggcttt	540
caatagttta	ctagaaaagg	cagaagcccc	tgaacgtgaa	agagaaaaag	aagaggctcg	600
gaagatgaaa	cgaaaagaat	ctgcatttaa	gagtatgtta	aaacaagctg	ctcctccgat	660
agaattggat	gctgtctggg	aagatatccg	tgagagattt	gtaaaagagc	cagcatttga	720
ggacataact	ctagaatctg	aaagaaaaac	aatatttaaa	gattttatgc	atgtgcttga	780
gcatgaatgt	cagcatcatc	attcaaagaa	caagaaacat	tctaagaaat	ctaaaaaaca	840
tcataggaaa	cgttcccgct	ctcgatcggg	gtcagattca	ngatgatgat	gatagccatt	900
caaagaaaaa	aagacagcga	tgagaagtct	cggtctgntt	canaacattc	ttccantngc	960
agagtctgag	agaagtntaa	aaagtcaaaa	nagcatagan	aggaaagtt		1009

&lt;210&gt; 100

&lt;211&gt; 292

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 100

```

Ala Asn Val Thr Tyr Ser Thr Thr Trp Ser Glu Ala Gln Gln Tyr Leu
 1           5           10           15
Met Asp Asn Pro Thr Phe Ala Glu Asp Glu Glu Leu Gln Asn Met Asp
          20           25           30
Lys Glu Asp Ala Leu Ile Cys Phe Glu Glu His Ile Arg Ala Leu Glu
          35           40           45
Lys Glu Glu Glu Glu Glu Lys Gln Lys Ser Leu Leu Arg Glu Arg Arg
          50           55           60
Arg Gln Arg Lys Asn Arg Glu Ser Phe Gln Ile Phe Leu Asp Glu Leu
65           70           75           80
His Glu His Gly Gln Leu His Ser Met Ser Ser Trp Met Glu Leu Tyr
          85           90           95
Pro Thr Ile Ser Ser Asp Ile Arg Phe Thr Asn Met Leu Gly Gln Pro
          100          105          110
Gly Ser Thr Ala Leu Asp Leu Phe Lys Phe Tyr Val Glu Asp Leu Lys
          115          120          125
Ala Arg Tyr His Asp Glu Lys Lys Ile Ile Lys Asp Ile Leu Lys Asp
          130          135          140
Lys Gly Phe Val Val Glu Val Asn Thr Thr Phe Glu Asp Phe Val Ala
145          150          155          160
Ile Ile Ser Ser Thr Lys Arg Ser Thr Thr Leu Asp Ala Gly Asn Ile
          165          170          175
Lys Leu Ala Phe Asn Ser Leu Leu Glu Lys Ala Glu Ala Arg Glu Arg
          180          185          190
Glu Arg Glu Lys Glu Glu Ala Arg Lys Met Lys Arg Lys Glu Ser Ala
          195          200          205
Phe Lys Ser Met Leu Lys Gln Ala Ala Pro Pro Ile Glu Leu Asp Ala
          210          215          220
Val Trp Glu Asp Ile Arg Glu Arg Phe Val Lys Glu Pro Ala Phe Glu
225          230          235          240
Asp Ile Thr Leu Glu Ser Glu Arg Lys Arg Ile Phe Lys Asp Phe Met
          245          250          255
His Val Leu Glu His Glu Cys Gln His His His Ser Lys Asn Lys Lys
          260          265          270
His Ser Lys Lys Ser Lys Lys His His Arg Lys Arg Ser Arg Ser Arg
          275          280          285
Ser Gly Ser Asp
290

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&lt;210&gt; 101

&lt;211&gt; 983

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 101

```

agggtgacaat agatatagaa gtacgttgat gtgcgaagat gtattttggt ttagccagcg      60
aggaaaaaag aatcagtttg attatacatt taccaaacat taagaattta atatggtaac      120
ttttattttca gtattaaaaat agcaatttta tttattactt ttttatatat agaatttgac      180
accaaattttt ggaacttaaa aagaagattc ttaaaaactta caatccagat tacgatgagg      240
acctggtgca ggaagcttca tctgaagatg tcctgggcgt tcatatggtg gacaaagaca      300
cagagagaga cattgagatg aaacggcaac tacggcgact acgggagctc cacctataca      360

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gcacatggaa gaagtaccaa gaggcgatga agacatcctt gggagttcca caacgtgagc 420
gtgacgaagg ctccctgggc aagccattgt gtccaccgga gatactctcg gagacgttgc 480
caggctctgt gaagaaaagg gtatgctttc catcagaaga tcatctagag gagtttatag 540
cagaacatct ccctgaagca tccaatcaga gtctcctcac tgttgcccat gcagacgcag 600
gcacccaaac caacgggtgac ctggaagacc tggaggagca tggggccaggg cagacagtct 660
ctgaggaagc cacagaagtt cacatgatgg agggggaccc agacacactg gccgaacttc 720
tgatcaggga tgtacttcag gagctgtcca gttacaacgg cgaggaggag gacccanagg 780
aggtgaagac atccttggga gttccacaac gtggtgacct ggaagacctg gaggagcatg 840
tgncagggca gnnnttctct gaggaagcca caggggttca catgatgcag gtggacccag 900
ccacgctggc aaagagtgc ctggaagacc tggaggagca tgtgccagag cagacagtct 960
ctgaggaagc cacaggggtt cac 983

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&lt;210&gt; 102

&lt;211&gt; 230

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 102

```

Met Val Asp Lys Asp Thr Glu Arg Asp Ile Glu Met Lys Arg Gln Leu
 1          5          10          15
Arg Arg Leu Arg Glu Leu His Leu Tyr Ser Thr Trp Lys Lys Tyr Gln
          20          25          30
Glu Ala Met Lys Thr Ser Leu Gly Val Pro Gln Arg Glu Arg Asp Glu
          35          40          45
Gly Ser Leu Gly Lys Pro Leu Cys Pro Pro Glu Ile Leu Ser Glu Thr
          50          55          60
Leu Pro Gly Ser Val Lys Lys Arg Val Cys Phe Pro Ser Glu Asp His
65          70          75          80
Leu Glu Glu Phe Ile Ala Glu His Leu Pro Glu Ala Ser Asn Gln Ser
          85          90          95
Leu Leu Thr Val Ala His Ala Asp Ala Gly Thr Gln Thr Asn Gly Asp
          100          105          110
Leu Glu Asp Leu Glu Glu His Gly Pro Gly Gln Thr Val Ser Glu Glu
          115          120          125
Ala Thr Glu Val His Met Met Glu Gly Asp Pro Asp Thr Leu Ala Glu
          130          135          140
Leu Leu Ile Arg Asp Val Leu Gln Glu Leu Ser Ser Tyr Asn Gly Glu
          145          150          155          160
Glu Glu Asp Pro Glu Val Lys Thr Ser Leu Gly Val Pro Gln Arg Gly
          165          170          175
Asp Leu Glu Asp Leu Glu Glu His Val Gly Gln Phe Ser Glu Glu Ala
          180          185          190
Thr Gly Val His Met Met Gln Val Asp Pro Ala Thr Leu Ala Lys Ser
          195          200          205
Asp Leu Glu Asp Leu Glu Glu His Val Pro Glu Gln Thr Val Ser Glu
          210          215          220
Glu Ala Thr Gly Val His
          225          230

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&lt;210&gt; 103

&lt;211&gt; 843

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 103

```

aatnccccgct gcaggtcgac actagtggat ccaaagaatt cggcacgagg caagttctgg      60
gagctggaca cggaccacga cctgctcatc gacgcggacg acctggcgcg gcacaatgac      120
cacgcccttt ctaccaagat gatagacagg atcttctcag gagcagtcac acgaggcaga      180
aaagtgcaga aggaagggaa gatcagctat gccgactttg tctggttttt gatctctgag      240
gaagacaaaa aaacaccgac cagcatcgag tactggttcc gctgcatgga cctggacggg      300
gacggcgccc tgtccatggt cgagctcgag tacttctacg aggagcagtg ccgaaggctg      360
gacagcatgg ccatacgagg cctgcccttc caggactgcc tctgccagat gctggacctg      420
gtcaagccga ggactgaagg gaagatcacg ctgcaggacc tgaagcgctg caagctggcc      480
aacgtcttct tcgacacctt cttcaacatc gagaagtncc tcgaccacga gcagaaagag      540
cagatctccc tgctcagggg cgggtgacagc ggcgggcccg agctctcgga ctggggagaag      600
tnccggccga agagtncgac atcctggtgg ccgangaaac cgtggggana nccctgggga      660
agacgggttc naaggcgaac tcacccccnt ggancanaaa ctgantgcgc tgcgctcccc      720
gctgggcan aggccttctt ccaagcgctt cccgctgggg cgccgtggaa ctgttncaaa      780
ttcccctgcg gggacaagaa cttgaaaccg ctgtganncc cccnncnana accnccccg      840
gnt                                                                    843

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&lt;210&gt; 104

&lt;211&gt; 197

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 104

```

Arg Cys Arg Ser Thr Leu Val Asp Pro Lys Asn Ser Ala Arg Gly Lys
1          5          10          15
Phe Trp Glu Leu Asp Thr Asp His Asp Leu Leu Ile Asp Ala Asp Asp
          20          25          30
Leu Ala Arg His Asn Asp His Ala Leu Ser Thr Lys Met Ile Asp Arg
          35          40          45
Ile Phe Ser Gly Ala Val Thr Arg Gly Arg Lys Val Gln Lys Glu Gly
          50          55          60
Lys Ile Ser Tyr Ala Asp Phe Val Trp Phe Leu Ile Ser Glu Glu Asp
65          70          75          80
Lys Lys Thr Pro Thr Ser Ile Glu Tyr Trp Phe Arg Cys Met Asp Leu
          85          90          95
Asp Gly Asp Gly Ala Leu Ser Met Phe Glu Leu Glu Tyr Phe Tyr Glu
          100         105         110
Glu Gln Cys Arg Arg Leu Asp Ser Met Ala Ile Glu Ala Leu Pro Phe
          115         120         125
Gln Asp Cys Leu Cys Gln Met Leu Asp Leu Val Lys Pro Arg Thr Glu
          130         135         140
Gly Lys Ile Thr Leu Gln Asp Leu Lys Arg Cys Lys Leu Ala Asn Val
          145         150         155         160
Phe Phe Asp Thr Phe Phe Asn Ile Glu Lys Leu Asp His Glu Gln Lys
          165         170         175
Glu Gln Ile Ser Leu Leu Arg Asp Gly Asp Ser Gly Gly Pro Glu Leu
          180         185         190
Ser Asp Trp Glu Lys
          195

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&lt;210&gt; 105

&lt;211&gt; 2264

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 105

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ctagcacaag tacacaggcc ccagccgctt cccctactgg tgtagttcct ggtaccaaatt 60
atgcagtacc tgacacgtcc acttaccagt atgatgaatc ttcaggatat tactatgatc 120
cgacaacagg gctctattat gaccccaact cgcaatacta ctataattcc ttgaccagc 180
agtaccttta ctgggatggg gaaaaagaga cctacgtgcc agctgcagag tctagctccc 240
accagcagtc gggcctgcct cctgcaaaaag aggggaaaaga gaagaaggag aaaccaaga 300
gcaaaacagc ccagcagatt gccaaagaca tggaaacgtg ggctaagagt ttgaataagc 360
agaaagaaaa ctttaaaaaat agctttcagc ctgtcaattc cttgagggaa gaagaaagga 420
gagaatctgc tgcagcagac gctggccttg ctctctttga gaagaaggga gccttagctg 480
aaaggcagca gctcatccca gaattgggtg gaaatggaga tgaggagaaat cccctcaaaa 540
ggggtctggg tgctgcttac agtgggtgaca gtgacaatga ggaggagctg gtggagagac 600
ttgagagtga ggaagagaag ctagctgact ggaagaagat ggctgtctg ctctgccggc 660
gccagttccc gaacaaagat gccctagtca ggcaccagca actctcagac cttcacaagc 720
aaaacatgga catctaccga cgatccaggc tgagcgagca ggagctggaa gccttggagc 780
taaggagag agagatgaaa taccgagacc gagctgcaga aagacgggag aagtacggca 840
ttccagaacc tccagagccc aagcgcaaga agcagtttga tgccggcact gtgaattacg 900
agcaaccac caaagatggc attgaccaca gtaacattgg caacaagatg ctgcaggcca 960
tgggctggcg ggaaggctct ggcttgggac gaaagtgtca aggcatcagc gctcccattg 1020
aggctcaagt tcggctaaaag ggagctggcc taggagccaa aggcagcgca tatggtttgt 1080
cgggcgcgca ttcctacaaa gatgctgtcc ggaaagccat gtttgcccgg ttcactgaga 1140
tggagtgaga gagagagaga gagagagatg acaaggagca caagaagtgg tccatctccc 1200
gaattcgctg ttaccgcctg tctctttaag ggcattgcct gtgctgttaa tagatcttag 1260
ggtgaaccac ttcattctgc agggttctcc ctcccacett aaagaagttc cccttatgtg 1320
ggttgccctg tgaatggcct tcttcccgc cagagggctt gtgaacagac cggagaggac 1380
agtggattgt ttatactcca gtgtacatag tgtaattgtag cgtgtttaca tgtgtagcct 1440
atgttgtggg ccatcagccc ctcacattcc taggggtttg agatgctgta ggtgggtatgt 1500
gacaccaaaag ccacctctgt catttggtgt gatgtctttt cttggcaaaa gccttgtgta 1560
tatttgata ttacacattt gtacagaatt ttggaagatt ttcaatccaa gttgccaaat 1620
ctggctcctt tacaaaagaa ataccttgag aaaaaaaann aannaaaaaa aannccnan 1680
nnntttttaa aangggncgg gggccaannn ttttccnncc gggnggggna nnaagtaaan 1740
ngtcccaaat nccccaaaaa nggagccenn ttaaaattaa angggccgcn nttttaaaan 1800
nttengaate gggnaaaacc tnggggtttt ccaaatttaa cccctttgaa aaaaaanccc 1860
ctttcncaaa anngggntaa tanccaaaaa gggcccccann ccatttttgc cntttccaaa 1920
aaaatttgnc caancnnnaa atgggnaaan ggggaatcca attttttaaa gggnnaaaaan 1980
gggtttaaac nnacgggntt ccaaanttgn ttgggggaat ttttaaattc ccaannnccc 2040
aaggggggnc atttagnngn cccnaatcc cccaaaaaant ggttcnnggn tnaaanncngc 2100
cnnnnccnaa tttntanggg tttacttngn tttaaaaaac ccncccaaaa actccccenn 2160
gaaccnaaaa aanaaaaagga ngccattttt ngngnnaaac ttttttaann nnccnnttaa 2220
anggggttaa aannnnnnnn tnnnccnaa tttttcaaan aang 2264

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&lt;210&gt; 106

&lt;211&gt; 381

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 106

```

Ser Thr Ser Thr Gln Ala Pro Ala Ala Ser Pro Thr Gly Val Val Pro
1          5          10          15
Gly Thr Lys Tyr Ala Val Pro Asp Thr Ser Thr Tyr Gln Tyr Asp Glu
          20          25          30
Ser Ser Gly Tyr Tyr Tyr Asp Pro Thr Thr Gly Leu Tyr Tyr Asp Pro
          35          40          45
Asn Ser Gln Tyr Tyr Tyr Asn Ser Leu Thr Gln Gln Tyr Leu Tyr Trp
          50          55          60
Asp Gly Glu Lys Glu Thr Tyr Val Pro Ala Ala Glu Ser Ser Ser His
65          70          75          80

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Gln Gln Ser Gly Leu Pro Pro Ala Lys Glu Gly Lys Glu Lys Lys Glu  
 85 90 95  
 Lys Pro Lys Ser Lys Thr Ala Gln Gln Ile Ala Lys Asp Met Glu Arg  
 100 105 110  
 Trp Ala Lys Ser Leu Asn Lys Gln Lys Glu Asn Phe Lys Asn Ser Phe  
 115 120 125  
 Gln Pro Val Asn Ser Leu Arg Glu Glu Glu Arg Arg Glu Ser Ala Ala  
 130 135 140  
 Ala Asp Ala Gly Phe Ala Leu Phe Glu Lys Lys Gly Ala Leu Ala Glu  
 145 150 155 160  
 Arg Gln Gln Leu Ile Pro Glu Leu Val Arg Asn Gly Asp Glu Glu Asn  
 165 170 175  
 Pro Leu Lys Arg Gly Leu Val Ala Ala Tyr Ser Gly Asp Ser Asp Asn  
 180 185 190  
 Glu Glu Glu Leu Val Glu Arg Leu Glu Ser Glu Glu Glu Lys Leu Ala  
 195 200 205  
 Asp Trp Lys Lys Met Ala Cys Leu Leu Cys Arg Arg Gln Phe Pro Asn  
 210 215 220  
 Lys Asp Ala Leu Val Arg His Gln Gln Leu Ser Asp Leu His Lys Gln  
 225 230 235 240  
 Asn Met Asp Ile Tyr Arg Arg Ser Arg Leu Ser Glu Gln Glu Leu Glu  
 245 250 255  
 Ala Leu Glu Leu Arg Glu Arg Glu Met Lys Tyr Arg Asp Arg Ala Ala  
 260 265 270  
 Glu Arg Arg Glu Lys Tyr Gly Ile Pro Glu Pro Pro Glu Pro Lys Arg  
 275 280 285  
 Lys Lys Gln Phe Asp Ala Gly Thr Val Asn Tyr Glu Gln Pro Thr Lys  
 290 295 300  
 Asp Gly Ile Asp His Ser Asn Ile Gly Asn Lys Met Leu Gln Ala Met  
 305 310 315 320  
 Gly Trp Arg Glu Gly Ser Gly Leu Gly Arg Lys Cys Gln Gly Ile Thr  
 325 330 335  
 Ala Pro Ile Glu Ala Gln Val Arg Leu Lys Gly Ala Gly Leu Gly Ala  
 340 345 350  
 Lys Gly Ser Ala Tyr Gly Leu Ser Gly Ala Asp Ser Tyr Lys Asp Ala  
 355 360 365  
 Val Arg Lys Ala Met Phe Ala Arg Phe Thr Glu Met Glu  
 370 375 380

&lt;210&gt; 107

&lt;211&gt; 1367

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 107

```

gcgacacagg cctcgaggct gtctctgaca agtgttcaca ggaggtgggg acgcctctgc      60
gcgaggaacg aggagctacg ggcctggggc cggttattgc catgggcagc ggctgccgca      120
tcgaatgcat attcttcagc gagttccacc ccacgctggg acccaagatc acctatcagg      180
tcctgaaga cttcatctcc cgagagctgt ttgacacagt ccaagtgtac atcatcacca      240
agccagagct gcagaacaag cttatcactg tcacagctat ggaaaagaag ctgatcggct      300
gtcctgtgtg catcgaacac aagaagtaca gccgcaatgc tctcctcttc aacctgggct      360
tcgtgtgtga tgcccaggcc aagacctgcg cctcagagcc cattgttaaa aagctggctg      420
gctatctgac cacactagag ctagagagca gcttcgtgtc catggaggag agcaagcaga      480
agttggtgcc catcatgacc atcttgctgg aggagctaaa tgcctcaggc cgggtgcactc      540
tgcccattga tgagtccaac accatccact tgaaggtgat tgagcagcgg ccagaccctc      600
  
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```

cgggtggccca ggagtatgat gtacctgtct ttaccaaaga caaggaggat ttcttcaact 660
cacagtggga cctcactaca caacaaatcc tgccctacat tgatgggttc cgccacatcc 720
agaagatttc agcagaggca gatgtggagc tcaacctggt gcgcattgct atccagaacc 780
tgctgtacta cggcggtgtg acactggtgt ccatacctcca gtactccaat gtatactgcc 840
caacgccccaa ggtccaggac ctggtagatg acaagtcctt gcaagaggca tgtctatcct 900
acgtgaccaa gcaagggcac aagagggccca gtctcgggga tgtgttccag ctatactgca 960
gcctgagccc tggcactacc gtgcgagacc tcattggccg ccacccccag cagctgcagc 1020
atgttgatga acggaagctg atccagttcg ggcttatgaa gaacctcatc aggcgactac 1080
agaagtatcc tgtgcgggtg actcgggaag agcagagcca ccctgcccgg ctttatacag 1140
gctgccacag ctatgacgag atctgctgca agacaggcat gagctaccat gagctggatg 1200
agcggcttga aaatgacccc aacatcatca tctgctggaa gtgaggctgg tagtgactgg 1260
atggacacat tgctgtgggt agtccctcct actaggaggc ttgtcatact gtctagaggt 1320
tgactcttag ttctgtaaat aaagacatcc atttcaaaca gccaaaa 1367

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&lt;210&gt; 108

&lt;211&gt; 413

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 108

```

Asp Thr Gly Leu Glu Ala Val Ser Asp Lys Cys Ser Gln Glu Val Gly
1          5          10          15
Thr Pro Leu Arg Glu Glu Arg Gly Ala Thr Gly Leu Gly Pro Val Ile
20          25          30
Ala Met Gly Ser Gly Cys Arg Ile Glu Cys Ile Phe Phe Ser Glu Phe
35          40          45
His Pro Thr Leu Gly Pro Lys Ile Thr Tyr Gln Val Pro Glu Asp Phe
50          55          60
Ile Ser Arg Glu Leu Phe Asp Thr Val Gln Val Tyr Ile Ile Thr Lys
65          70          75          80
Pro Glu Leu Gln Asn Lys Leu Ile Thr Val Thr Ala Met Glu Lys Lys
85          90          95
Leu Ile Gly Cys Pro Val Cys Ile Glu His Lys Lys Tyr Ser Arg Asn
100          105          110
Ala Leu Leu Phe Asn Leu Gly Phe Val Cys Asp Ala Gln Ala Lys Thr
115          120          125
Cys Ala Leu Glu Pro Ile Val Lys Lys Leu Ala Gly Tyr Leu Thr Thr
130          135          140
Leu Glu Leu Glu Ser Ser Phe Val Ser Met Glu Ser Lys Gln Lys
145          150          155          160
Leu Val Pro Ile Met Thr Ile Leu Leu Glu Glu Leu Asn Ala Ser Gly
165          170          175
Arg Cys Thr Leu Pro Ile Asp Glu Ser Asn Thr Ile His Leu Lys Val
180          185          190
Ile Glu Gln Arg Pro Asp Pro Pro Val Ala Gln Glu Tyr Asp Val Pro
195          200          205
Val Phe Thr Lys Asp Lys Glu Asp Phe Phe Asn Ser Gln Trp Asp Leu
210          215          220
Thr Thr Gln Gln Ile Leu Pro Tyr Ile Asp Gly Phe Arg His Ile Gln
225          230          235          240
Lys Ile Ser Ala Glu Ala Asp Val Glu Leu Asn Leu Val Arg Ile Ala
245          250          255
Ile Gln Asn Leu Leu Tyr Tyr Gly Val Val Thr Leu Val Ser Ile Leu
260          265          270
Gln Tyr Ser Asn Val Tyr Cys Pro Thr Pro Lys Val Gln Asp Leu Val

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275                      280                      285  
 Asp Asp Lys Ser Leu Gln Glu Ala Cys Leu Ser Tyr Val Thr Lys Gln  
 290                      295                      300  
 Gly His Lys Arg Ala Ser Leu Arg Asp Val Phe Gln Leu Tyr Cys Ser  
 305                      310                      315                      320  
 Leu Ser Pro Gly Thr Thr Val Arg Asp Leu Ile Gly Arg His Pro Gln  
 325                      330                      335  
 Gln Leu Gln His Val Asp Glu Arg Lys Leu Ile Gln Phe Gly Leu Met  
 340                      345                      350  
 Lys Asn Leu Ile Arg Arg Leu Gln Lys Tyr Pro Val Arg Val Thr Arg  
 355                      360                      365  
 Glu Glu Gln Ser His Pro Ala Arg Leu Tyr Thr Gly Cys His Ser Tyr  
 370                      375                      380  
 Asp Glu Ile Cys Cys Lys Thr Gly Met Ser Tyr His Glu Leu Asp Glu  
 385                      390                      395                      400  
 Arg Leu Glu Asn Asp Pro Asn Ile Ile Ile Cys Trp Lys  
 405                      410

&lt;210&gt; 109

&lt;211&gt; 2113

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 109

gtgcggttgga gaacgcggag cggacggatt cgattcaacg gggttccgga ccgcgctgcg 60  
 ctatggagca ggtcaatgag ctgaaggaga aaggcaacaa ggccctgagc gtgggtaaca 120  
 tcgatgatgc cttacagtgc tactccgaag ctattaagct ggatccccac aaccacgtgc 180  
 tgtacagcaa ccgttctgct gcctatgcca agaaaggaga ctaccagaag gcttatgagg 240  
 atggctgcaa gactgtcgac ctaaagcctg actggggcaa gggctattca cgaaaagcag 300  
 cagctctaga gttcttaaac cgctttgaag aagccaagcg aacctatgag gagggcttaa 360  
 aacacgaggg aaataaccct caactgaaag agggtttaca gaatatggag gccaggttgg 420  
 cagagagaaa attcatgaac cctttcaaca tgcctaactc gtatcagaag ttggagagtg 480  
 atcccaggac aaggacacta ctacgtgatc ctacctaccg ggagctgata gagcagctac 540  
 gaaacaagcc ttctgacctg ggcacgaaac tacaagatcc ccggatcatg accactctca 600  
 gcgtcctcct tggggctgat ctgggcagta tggatgagga ggaagagatt gcaacacctc 660  
 caccaccacc ccctcccaaa aaggagacca agccagagcc aatggaagaa gatcttccag 720  
 agaataagaa gcaggcactg aaagaaaaag agctggggaa cgatgcctac aagaagaaag 780  
 actttgacac agccttgaag cattacgaca aagccaagga gctggacccc actaacatga 840  
 cttacattac caatcaagca gcggtatact ttgaaaaggg cgactacaat aagtgcggg 900  
 agctttgtga gaaggccatt gaagtgggga gagaaaaccg agaagactat cgacagattg 960  
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&lt;210&gt; 110

&lt;211&gt; 543

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 110

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Met Glu Gln Val Asn Glu Leu Lys Glu Lys Gly Asn Lys Ala Leu Ser
 1          5          10          15
Val Gly Asn Ile Asp Asp Ala Leu Gln Cys Tyr Ser Glu Ala Ile Lys
          20          25          30
Leu Asp Pro His Asn His Val Leu Tyr Ser Asn Arg Ser Ala Ala Tyr
          35          40          45
Ala Lys Lys Gly Asp Tyr Gln Lys Ala Tyr Glu Asp Gly Cys Lys Thr
          50          55          60
Val Asp Leu Lys Pro Asp Trp Gly Lys Gly Tyr Ser Arg Lys Ala Ala
          65          70          75          80
Ala Leu Glu Phe Leu Asn Arg Phe Glu Glu Ala Lys Arg Thr Tyr Glu
          85          90          95
Glu Gly Leu Lys His Glu Ala Asn Asn Pro Gln Leu Lys Glu Gly Leu
          100          105          110
Gln Asn Met Glu Ala Arg Leu Ala Glu Arg Lys Phe Met Asn Pro Phe
          115          120          125
Asn Met Pro Asn Leu Tyr Gln Lys Leu Glu Ser Asp Pro Arg Thr Arg
          130          135          140
Thr Leu Leu Ser Asp Pro Thr Tyr Arg Glu Leu Ile Glu Gln Leu Arg
          145          150          155          160
Asn Lys Pro Ser Asp Leu Gly Thr Lys Leu Gln Asp Pro Arg Ile Met
          165          170          175
Thr Thr Leu Ser Val Leu Leu Gly Val Asp Leu Gly Ser Met Asp Glu
          180          185          190
Glu Glu Glu Ile Ala Thr Pro Pro Pro Pro Pro Pro Pro Lys Lys Glu
          195          200          205
Thr Lys Pro Glu Pro Met Glu Glu Asp Leu Pro Glu Asn Lys Lys Gln
          210          215          220
Ala Leu Lys Glu Lys Glu Leu Gly Asn Asp Ala Tyr Lys Lys Lys Asp
          225          230          235          240
Phe Asp Thr Ala Leu Lys His Tyr Asp Lys Ala Lys Glu Leu Asp Pro
          245          250          255
Thr Asn Met Thr Tyr Ile Thr Asn Gln Ala Ala Val Tyr Phe Glu Lys
          260          265          270
Gly Asp Tyr Asn Lys Cys Arg Glu Leu Cys Glu Lys Ala Ile Glu Val
          275          280          285
Gly Arg Glu Asn Arg Glu Asp Tyr Arg Gln Ile Ala Lys Ala Tyr Ala
          290          295          300
Arg Ile Gly Asn Ser Tyr Phe Lys Glu Glu Lys Tyr Lys Asp Ala Ile
          305          310          315          320
His Phe Tyr Asn Lys Ser Leu Ala Glu His Arg Thr Pro Asp Val Leu
          325          330          335
Lys Lys Cys Gln Gln Ala Glu Lys Ile Leu Lys Glu Gln Glu Arg Leu

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 Ala Tyr Ile Asn Pro Asp Leu Ala Leu Glu Glu Lys Asn Lys Gly Asn  
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 Glu Cys Phe Gln Lys Gly Asp Tyr Pro Gln Ala Met Lys His Tyr Thr  
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 Glu Ala Ile Lys Arg Asn Pro Lys Asp Ala Lys Leu Tyr Ser Asn Arg  
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 Cys Glu Glu Cys Ile Gln Leu Glu Pro Thr Phe Ile Lys Gly Tyr Thr  
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 Arg Lys Ala Ala Ala Leu Glu Ala Met Lys Asp Tyr Thr Lys Ala Met  
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 Asp Val Tyr Gln Lys Ala Leu Asp Leu Asp Ser Ser Cys Lys Glu Ala  
 450 455 460  
 Ala Asp Gly Tyr Gln Arg Cys Met Met Ala Gln Tyr Asn Arg His Asp  
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 Ser Pro Glu Asp Val Lys Arg Arg Ala Met Ala Asp Pro Glu Val Gln  
 485 490 495  
 Gln Ile Met Ser Asp Pro Ala Met Arg Leu Ile Leu Glu Gln Met Gln  
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 Lys Asp Pro Gln Ala Leu Ser Glu His Leu Lys Asn Pro Val Ile Ala  
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 Gln Lys Ile Gln Lys Leu Met Asp Val Gly Leu Ile Ala Ile Arg  
 530 535 540

&lt;210&gt; 111

&lt;211&gt; 2765

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 111

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<210> 112  
 <211> 834  
 <212> PRT  
 <213> Homo Sapiens

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<400> 112
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35 40 45
His Gly Arg Gln Gly Ile Val Pro Gly Asn Arg Val Lys Leu Leu Ile
50 55 60
Gly Pro Met Gln Glu Thr Ala Ser Ser His Glu Gln Pro Ala Ser Gly
65 70 75 80
Leu Met Gln Gln Thr Phe Gly Gln Gln Lys Leu Tyr Gln Val Pro Asn
85 90 95
Pro Gln Ala Ala Pro Arg Asp Thr Ile Tyr Gln Val Pro Pro Ser Tyr
100 105 110
Gln Asn Gln Gly Ile Tyr Gln Val Pro Thr Gly His Gly Thr Gln Glu
115 120 125
Gln Glu Val Tyr Gln Val Pro Pro Ser Val Gln Arg Ser Ile Gly Gly
130 135 140
Thr Ser Gly Pro His Val Gly Lys Lys Val Ile Thr Pro Val Arg Thr
145 150 155 160
Gly His Gly Tyr Val Tyr Glu Tyr Pro Ser Arg Tyr Gln Lys Asp Val
165 170 175
Tyr Asp Ile Pro Pro Ser His Thr Thr Gln Gly Val Tyr Asp Ile Pro
180 185 190

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Pro Ser Ser Ala Lys Gly Pro Val Phe Ser Val Pro Val Gly Glu Ile  
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 Lys Pro Gln Gly Val Tyr Asp Ile Pro Pro Thr Lys Gly Val Tyr Ala  
 210 215 220  
 Ile Pro Pro Ser Ala Cys Arg Asp Glu Ala Gly Leu Arg Glu Lys Asp  
 225 230 235 240  
 Tyr Asp Phe Pro Pro Pro Met Arg Gln Ala Gly Arg Pro Asp Leu Arg  
 245 250 255  
 Pro Glu Gly Val Tyr Asp Ile Pro Pro Thr Cys Thr Lys Pro Ala Gly  
 260 265 270  
 Lys Asp Leu His Val Lys Tyr Asn Cys Asp Ile Pro Gly Ala Ala Glu  
 275 280 285  
 Pro Val Ala Arg Arg His Gln Ser Leu Ser Pro Asn His Pro Pro Pro  
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 Gln Leu Gly Gln Ser Val Gly Ser Gln Asn Asp Ala Tyr Asp Val Pro  
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 Arg Gly Val Gln Phe Leu Glu Pro Pro Ala Glu Thr Ser Glu Lys Ala  
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 Pro Asp Ala Lys Gly Ser Arg Asp Leu Val Asp Gly Ile Asn Arg Leu  
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 Ser Phe Ser Ser Thr Gly Ser Thr Arg Ser Asn Met Ser Thr Ser Ser  
 370 375 380  
 Thr Ser Ser Lys Glu Ser Ser Leu Ser Ala Ser Pro Ala Gln Asp Lys  
 385 390 395 400  
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 420 425 430  
 Thr Asp Trp Arg Cys Tyr Gly Tyr Met Glu Arg His Ile Asn Glu Ile  
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 545 550 555 560  
 Pro Gly Ser Leu His Leu Lys Asn Gly Pro Glu Ser Ile Met Asn Ser  
 565 570 575  
 Thr Glu Tyr Pro His Gly Gly Ser Gln Gly Gln Leu Leu His Pro Gly  
 580 585 590  
 Asp His Lys Ala Gln Ala His Asn Lys Ala Leu Pro Pro Gly Leu Ser  
 595 600 605  
 Lys Glu Gln Ala Pro Asp Cys Ser Ser Ser Asp Gly Ser Glu Arg Ser  
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&lt;210&gt; 114

&lt;211&gt; 906

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 114

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              20              25              30
Val Thr Gln Val Thr Thr Leu Val Asn Thr Asn Ser Lys Gly Pro Ser
              35              40              45
Asn Lys Lys Arg Gly Arg Ser Lys Lys Ala His Val Leu Ala Ala Ser
              50              55              60
Val Glu Gln Ala Thr Glu Asn Phe Leu Glu Lys Gly Asp Lys Ile Ala
              65              70              75              80
Lys Glu Ser Gln Phe Leu Lys Glu Glu Leu Val Ala Ala Val Glu Asp

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-82-

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 565 570 575  
 Lys Leu Leu Ser Asn Thr Val Met Pro Arg Phe Thr Glu Gln Val Glu  
 580 585 590  
 Ala Ala Val Glu Ala Leu Ser Ser Asp Pro Ala Gln Pro Met Asp Glu  
 595 600 605  
 Asn Glu Phe Ile Asp Ala Ser Arg Leu Val Tyr Asp Gly Ile Arg Asp  
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<210> 115  
 <211> 1701  
 <212> DNA  
 <213> Homo Sapiens

<400> 115

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cctttcacac atggattatt ataagtttca atcctgggat ctgtgcttga tttttatcag     1560
ttttgtgtag atttttatgt ttcatatatt aaattttaa cccacattgt aaagtttcta     1620
caatttgtcc tgaagctttg tgtttggctg cacctgcata agctgtctaca aatagaataa     1680
agaatttcat agcctgtaaa a

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<210> 116  
 <211> 415  
 <212> PRT  
 <213> Homo Sapiens

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<400> 116
Met Ala Asn Val Ala Asp Thr Lys Leu Tyr Asp Ile Leu Gly Val Pro
 1             5             10             15
Ala Gly Ala Ser Glu Asn Glu Leu Lys Lys Ala Tyr Arg Lys Leu Ala
      20             25             30
Lys Glu Tyr His Pro Asp Lys Asn Pro Gln Met Gln Glu Thr Asn Phe
      35             40             45
Lys Glu Ile Ser Phe Ala Tyr Glu Val Leu Ser Asn Pro Glu Lys Arg
      50             55             60
Glu Leu Tyr Asp Arg Tyr Gly Glu Gln Gly Leu Arg Glu Gly Ser Gly
      65             70             75             80
Gly Gly Gly Trp His Gly Leu Ile Phe Ser Leu Thr Val Phe Cys Gly
      85             90             95
Gly Leu Phe Gly Phe Met Gly Asn Gln Ser Arg Ser Arg Asn Gly Arg
      100            105            110
Arg Arg Gly Glu Asp Met Met His Pro Leu Lys Val Ser Leu Glu Asp
      115            120            125
Leu Tyr Asn Gly Lys Thr Thr Lys Leu Gln Leu Ser Lys Asn Val Leu
      130            135            140
Cys Ser Ala Cys Ser Gly Gln Gly Gly Lys Ser Gly Ala Val Gln Lys

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<210> 117
<211> 1821
<212> DNA
<213> Homo Sapiens
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<400> 117							
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tgcccagatg	ctcaaggagg	gagcgaaaca	cttttcagga	ttagaagagg	ctgtgtatag	120	
aaacatacaa	gcttgcaagg	agcttgcccc	aaccactcgt	acagcatatg	gaccaaaagg	180	
aatgaacaaa	atggttatca	accacttgga	gaagttgttt	gtgacaaacg	atgcagcaac	240	
tattttaaga	gaactagaag	tacagcatcc	tgctgcaaaa	atgattgtaa	tggcttctca	300	
tatgcaagag	caagaagttg	gagatggcac	aaactttggt	ctgggtattt	ctggagctct	360	
cctggaatta	gctgaagaac	ttctgaggat	tggcctgtca	gtttcagagg	tcatagaagg	420	
ttatgaaata	gcctgcagaa	aagctcatga	gattcttcct	aatttgggat	gttgttctgc	480	
aaaaaacctt	cgagatattg	atgaagtctc	atctctactt	cgtacctcca	taatgagtaa	540	
acaatatggt	aatgaagtat	ttctggccaa	gcttattgct	caggcatgcg	tatctatttt	600	
tcttgattcc	ggccatttca	atgttgataa	catcagagtt	tgtaaaattc	tgggctctgg	660	
tatcagttcc	taattcagtat	tgcattggcat	ggtttttaag	aaggaaaaccg	aagggtgatgt	720	
aacatctgtc	aagtagtcaa	aaatagcagt	gtactcttgt	ccttttgatg	gcatgataac	780	
agaaactaag	ggaacagtgt	tgataaagac	tgctgaagaa	ttgatgaatt	ttagtaagggt	840	
aqaaqaaaac	ctcatggatg	cacaagtcaa	agctattgct	gatactggtg	caaatgtcgt	900	



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agtaacaggt ggcaaagtgg cagacatggc tcttcattat gcaaataaat ataatatcat      960
gttagtgagg ctaaactcaa aatgggatct ccgaagactt tgtaaaactg ttgggtgtac      1020
agctcttcc agattgacac ctccgtcct tgaagaaatg ggacactgtg acagtgttta      1080
cctctcagaa gttggagata ctcaggtggt ggtttttaag catgaaaagg aagatggcgc      1140
catttctacc atagtacttc gaggtctctac agacaatctg atggatgaca tagaaagggt      1200
agtagacgat ggtgttaata ctttcaaagt tcttacaagg gataaacgtc ttgtaccggg      1260
aggtggagca acagaaattg aattagccaa acagatcaca tcatatggag agacatgtcc      1320
tggaacttgaa cagtatgcta ttaagaagtt tgctgaggca tttgaagcta ttccccgcgc      1380
actggcagaa aactctggag ttaaggccaa tgaagtaatc tctaaacttt atgcagtaca      1440
tcaagaagga aataaaaacg ttggattaga tattgaggct gaagtccctg ctgtaaagga      1500
catgctggaa gctgggtattc tagatactta cctgggaaaa tattgggcta tcaaaactcg      1560
tactaatgct gcagtcactg tacttagagt ggatcagatc atcatggcaa aaccagctgg      1620
tgggcccaag cctccaagtg ggaagaaaga ctgggatgat gacaaaaatg attgaaattg      1680
gcttaatttt tactgtaggt gaaggctgta tttgtagtag tactcaagaa tcacctgatg      1740
ttttcttatt ctcttaaat taagagttat tttgtgtttg tattcttggc tggatgttat      1800
aataaacata ttgttactgt c                                     1821

```

&lt;210&gt; 118

&lt;211&gt; 548

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 118

```

Met Ala Leu His Val Pro Lys Ala Pro Gly Phe Ala Gln Met Leu Lys
 1              5              10              15
Glu Gly Ala Lys His Phe Ser Gly Leu Glu Glu Ala Val Tyr Arg Asn
      20              25              30
Ile Gln Ala Cys Lys Glu Leu Ala Gln Thr Thr Arg Thr Ala Tyr Gly
      35              40              45
Pro Lys Gly Met Asn Lys Met Val Ile Asn His Leu Glu Lys Leu Phe
      50              55              60
Val Thr Asn Asp Ala Ala Thr Ile Leu Arg Glu Leu Glu Val Gln His
      65              70              75              80
Pro Ala Ala Lys Met Ile Val Met Ala Ser His Met Gln Glu Gln Glu
      85              90              95
Val Gly Asp Gly Thr Asn Phe Val Leu Val Phe Ala Gly Ala Leu Leu
      100             105             110
Glu Leu Ala Glu Glu Leu Leu Arg Ile Gly Leu Ser Val Ser Glu Val
      115             120             125
Ile Glu Gly Tyr Glu Ile Ala Cys Arg Lys Ala His Glu Ile Leu Pro
      130             135             140
Asn Leu Val Cys Cys Ser Ala Lys Asn Leu Arg Asp Ile Asp Glu Val
      145             150             155             160
Ser Ser Leu Leu Arg Thr Ser Ile Met Ser Lys Gln Tyr Gly Asn Glu
      165             170             175
Val Phe Leu Ala Lys Leu Ile Ala Gln Ala Cys Val Ser Ile Phe Pro
      180             185             190
Asp Ser Gly His Phe Asn Val Asp Asn Ile Arg Val Cys Lys Ile Leu
      195             200             205
Gly Ser Gly Ile Ser Ser Ser Ser Val Leu His Gly Met Val Phe Lys
      210             215             220
Lys Glu Thr Glu Gly Asp Val Thr Ser Val Lys Asp Ala Lys Ile Ala
      225             230             235             240
Val Tyr Ser Cys Pro Phe Asp Gly Met Ile Thr Glu Thr Lys Gly Thr
      245             250             255

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Val Leu Ile Lys Thr Ala Glu Glu Leu Met Asn Phe Ser Lys Gly Glu  
 260 265 270  
 Glu Asn Leu Met Asp Ala Gln Val Lys Ala Ile Ala Asp Thr Gly Ala  
 275 280 285  
 Asn Val Val Val Thr Gly Gly Lys Val Ala Asp Met Ala Leu His Tyr  
 290 295 300  
 Ala Asn Lys Tyr Asn Ile Met Leu Val Arg Leu Asn Ser Lys Trp Asp  
 305 310 315 320  
 Leu Arg Arg Leu Cys Lys Thr Val Gly Ala Thr Ala Leu Pro Arg Leu  
 325 330 335  
 Thr Pro Pro Val Leu Glu Glu Met Gly His Cys Asp Ser Val Tyr Leu  
 340 345 350  
 Ser Glu Val Gly Asp Thr Gln Val Val Val Phe Lys His Glu Lys Glu  
 355 360 365  
 Asp Gly Ala Ile Ser Thr Ile Val Leu Arg Gly Ser Thr Asp Asn Leu  
 370 375 380  
 Met Asp Asp Ile Glu Arg Val Val Asp Asp Gly Val Asn Thr Phe Lys  
 385 390 395 400  
 Val Leu Thr Arg Asp Lys Arg Leu Val Pro Gly Gly Gly Ala Thr Glu  
 405 410 415  
 Ile Glu Leu Ala Lys Gln Ile Thr Ser Tyr Gly Glu Thr Cys Pro Gly  
 420 425 430  
 Leu Glu Gln Tyr Ala Ile Lys Lys Phe Ala Glu Ala Phe Glu Ala Ile  
 435 440 445  
 Pro Arg Ala Leu Ala Glu Asn Ser Gly Val Lys Ala Asn Glu Val Ile  
 450 455 460  
 Ser Lys Leu Tyr Ala Val His Gln Glu Gly Asn Lys Asn Val Gly Leu  
 465 470 475 480  
 Asp Ile Glu Ala Glu Val Pro Ala Val Lys Asp Met Leu Glu Ala Gly  
 485 490 495  
 Ile Leu Asp Thr Tyr Leu Gly Lys Tyr Trp Ala Ile Lys Leu Ala Thr  
 500 505 510  
 Asn Ala Ala Val Thr Val Leu Arg Val Asp Gln Ile Ile Met Ala Lys  
 515 520 525  
 Pro Ala Gly Gly Pro Lys Pro Pro Ser Gly Lys Lys Asp Trp Asp Asp  
 530 535 540  
 Asp Gln Asn Asp  
 545

<210> 119  
 <211> 1321  
 <212> DNA  
 <213> Homo Sapiens

<400> 119  
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 ctggtagaca gttactggac gaagtagaag tggcgactga acccgccggt tcccgatag 120  
 tccaggagaa ggtgttcaag ggcttggacc tccttgagaa ggctgccgaa atgttatcgc 180  
 agctcgactt gttcagccga aatgaagatt tggaagagat tgcttcacc gacctgaagt 240  
 accttttggg gccagcgttt caaggagccc tcaccatgaa acaagtcaac cccagcaagc 300  
 gtctagatca tttgcagcgg gctcgagaac actttataaa ctacttaact cagtgccatt 360  
 gctatcatgt ggcagagttt gagctgccc aaacctatgaa caactctgct gaaaatcaca 420  
 ctgccaatte ctccatggct taccatagtc tcgttgctat ggcattctcaa agacaggcta 480  
 aaatacagag atacaagcag aagaaggagt tggagcatag gttgtctgca atgaaatctg 540  
 ctgtggaag tggtcaagca gatgatgagc gtgttcgtga atattatctt cttcaccttc 600

```

agagggtggat tgatatcagc ttagaagaga ttgagagcat tgaccaggaa ataaagatcc      660
tgagagaaaag agactcttca agagaggcat caacttctaa ctcattctgc caggagaggc      720
ctccagtgaag acccttcatt ctcaactcga acatggctca agccaaagta tttggagctg      780
gttatccaag tctgccaact atgacggtga gtgactggta tgagcaacat cggaaatatg      840
gagcattacc ggatcaggga atagccaagg cagcaccaga ggaattcaga aaagcagctc      900
agcaacagga agaacaagaa gaaaaggagg aagaggatga tgaacaaaca ctccacagag      960
ccggggagtgg ggatgactgg aaggacaccc atcctagggg ctatgggaac cgacagaaca     1020
tgggctgata tccccacaac accacaggac tgcagggtgc acaactccct gccaaagaaa     1080
accatgcagt cctccccctc ctggtctcct gcttcagctc tgtacaacga gggcaaagat     1140
gctaaatctt gctttgcatt cagtaaagtg tcaagtgatt aagtgtgtat ttgtacccta     1200
gatgatatga accagcagtc ttgttttggc atcatcctca tcatgttgta ttccagcttc     1260
ttaagtggaa ggaaaagagt gctgagaaat ggctctgtat aatctatggc tatccgaatt     1320
c                                                                           1321

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<210> 120  
 <211> 339  
 <212> PRT  
 <213> Homo Sapiens

<400> 120

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Met Ala Ala Glu Asp Glu Leu Gln Leu Pro Arg Leu Pro Glu Leu Phe
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Glu Thr Gly Arg Gln Leu Leu Asp Glu Val Glu Val Ala Thr Glu Pro
      20              25              30
Ala Gly Ser Arg Ile Val Gln Glu Lys Val Phe Lys Gly Leu Asp Leu
      35              40              45
Leu Glu Lys Ala Ala Glu Met Leu Ser Gln Leu Asp Leu Phe Ser Arg
      50              55              60
Asn Glu Asp Leu Glu Glu Ile Ala Ser Thr Asp Leu Lys Tyr Leu Leu
      65              70              75              80
Val Pro Ala Phe Gln Gly Ala Leu Thr Met Lys Gln Val Asn Pro Ser
      85              90              95
Lys Arg Leu Asp His Leu Gln Arg Ala Arg Glu His Phe Ile Asn Tyr
      100             105             110
Leu Thr Gln Cys His Cys Tyr His Val Ala Glu Phe Glu Leu Pro Lys
      115             120             125
Thr Met Asn Asn Ser Ala Glu Asn His Thr Ala Asn Ser Ser Met Ala
      130             135             140
Tyr Pro Ser Leu Val Ala Met Ala Ser Gln Arg Gln Ala Lys Ile Gln
      145             150             155             160
Arg Tyr Lys Gln Lys Lys Glu Leu Glu His Arg Leu Ser Ala Met Lys
      165             170             175
Ser Ala Val Glu Ser Gly Gln Ala Asp Asp Glu Arg Val Arg Glu Tyr
      180             185             190
Tyr Leu Leu His Leu Gln Arg Trp Ile Asp Ile Ser Leu Glu Glu Ile
      195             200             205
Glu Ser Ile Asp Gln Glu Ile Lys Ile Leu Arg Glu Arg Asp Ser Ser
      210             215             220
Arg Glu Ala Ser Thr Ser Asn Ser Ser Arg Gln Glu Arg Pro Pro Val
      225             230             235             240
Lys Pro Phe Ile Leu Thr Arg Asn Met Ala Gln Ala Lys Val Phe Gly
      245             250             255
Ala Gly Tyr Pro Ser Leu Pro Thr Met Thr Val Ser Asp Trp Tyr Glu
      260             265             270
Gln His Arg Lys Tyr Gly Ala Leu Pro Asp Gln Gly Ile Ala Lys Ala

```

275	280	285
Ala Pro Glu Glu Phe Arg Lys Ala Ala Gln Gln Gln Glu Glu Gln Glu		
290	295	300
Glu Lys Glu Glu Glu Asp Asp Glu Gln Thr Leu His Arg Ala Arg Glu		
305	310	315
Trp Asp Asp Trp Lys Asp Thr His Pro Arg Gly Tyr Gly Asn Arg Gln		
325	330	335
Asn Met Gly		

<210> 121  
 <211> 2965  
 <212> DNA  
 <213> Homo Sapiens

<400> 121

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ccttagcggt	cctctctggg	cggcgggcggc	ggcggtctcg	ttgacgcctc	ctccgccagc	120
tgagcccgcg	ggagcccagg	acgccgcttc	cccgcacctc	cccgtcccc	gaggccggcc	180
gcctggtcat	ggcgccagccg	ggccccggtt	cccagcctga	cgtttctctt	cagcaacggg	240
tagcagaatt	ggaaaaaatt	aatgcagaat	ttttacgtgc	acaacagcag	cttgaacaag	300
aatttaata	aaagagagca	aaatttaagg	agttatat	ggctaaagag	gaggatctga	360
agaggcaaaa	tgcagtatta	caagctgcac	aagatgattt	gggacacctt	cgaaccagc	420
tgtgggaagc	tcaagcagag	atggagaata	ttaaggcgat	tgccacagtc	tctgagaaca	480
ccaagcaaga	agctatagat	gaagtgaaaa	gacagtggag	agaagaagtt	gcttcacttc	540
aggctgttat	gaaagaaaca	gttcgtgact	atgagcacca	gttccacctt	aggctggagc	600
aggagcgaac	acagtgggca	cagtataag	aatacgcaga	gagggaaata	gctgatttaa	660
gaagaaggct	gtctgaagg	caagaggagg	aaaatttaga	aaatgaaatg	aaaaaggccc	720
aagaggatgc	tgagaaactt	cgttcggtt	tgatgccaat	ggaaaaggaa	attgcagctt	780
tgaaggataa	actgacagag	gctgaagaca	aaattaaaga	gctggaggcc	tcaaagggtta	840
aagaactgaa	tcattatctg	gaagctgaga	aatctttag	gactgatcta	gagatgtatg	900
tagctgtttt	gaatactcag	aaatctgttc	tacaggaaga	tgctgagaaa	ctgcggaaag	960
aattgcatga	agtttgccat	ctcttgaggc	aagagcgaca	acaacacaa	cagttaaaac	1020
atacgtggca	gaaggccaat	gaccagtttc	tggaaatctca	gcgtttactg	atgagagaca	1080
tgcagcgaat	ggagattgtg	ctaacttcag	aacagctccg	acaagttgaa	gaactgaaga	1140
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cagatgttga	ggaagaaata	aaaataccag	tagtgtgtgc	tttaactcaa	gaagaatctt	1260
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atthtggacc	actggttaga	gcagattcag	tgtctgagaa	ctttgatact	gcatcccttg	1560
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attacgaaaa	acagttacaa	ggaattcaga	ttcaggaggc	tgaaacgaga	gaccagggtga	1860
aaaaactaca	gctgatgcta	aggcaagcta	atgaccagtt	agagaagaca	atgaaagata	1920
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cactcgtcct	aagagcccag	gcctccgaga	tcttacttga	agagttacag	caggggcttt	2040
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gggagttggt	attaaaatac	cgtgaggaca	tcattaatgt	gcggacagca	gcagaccacg	2280
tagaagaaaa	gctgaaggct	gagatacttt	tcctaaaaga	gcagatccaa	gcagaacagt	2340

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gtttaaaaga aaatcttgaa gaaactctgc aactagaaat agaaaactgc aaggaggaaa 2400
tagcttctat ttctagccta aaagctgaat tagaaagaat aaaagtggaa aaaggacagt 2460
tggagtccac attaagagag aagtctcaac agcttgagag tcttcaggaa ataaagatca 2520
gtttggaaga gcagttaaag aaagagactg ctgctaaggc taccgttgaa cagctaattgt 2580
ttgaagagaa gaacaaagct cagagattac agacagaatt agatgtcagt gagcaagtcc 2640
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agcttctctga gacatgacac cctcatggca ggattctagc ctgcactttg ggtttttaac 2820
tcattcttag agcaacagta attattattt aactcttaac tgaagaaaga gaagtcacaa 2880
caaaaggaag actggagaaa tgcttacttc tagagggaga agactgtgcg gcacaggaaa 2940
cagcaaacag tggggtgatc tgcag 2965

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&lt;210&gt; 122

&lt;211&gt; 862

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 122

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Met Ala Gln Pro Gly Pro Ala Ser Gln Pro Asp Val Ser Leu Gln Gln
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Arg Val Ala Glu Leu Glu Lys Ile Asn Ala Glu Phe Leu Arg Ala Gln
20     25     30
Gln Gln Leu Glu Gln Glu Phe Asn Gln Lys Arg Ala Lys Phe Lys Glu
35     40     45
Leu Tyr Leu Ala Lys Glu Glu Asp Leu Lys Arg Gln Asn Ala Val Leu
50     55     60
Gln Ala Ala Gln Asp Asp Leu Gly His Leu Arg Thr Gln Leu Trp Glu
65     70     75     80
Ala Gln Ala Glu Met Glu Asn Ile Lys Ala Ile Ala Thr Val Ser Glu
85     90     95
Asn Thr Lys Gln Glu Ala Ile Asp Glu Val Lys Arg Gln Trp Arg Glu
100    105    110
Glu Val Ala Ser Leu Gln Ala Val Met Lys Glu Thr Val Arg Asp Tyr
115    120    125
Glu His Gln Phe His Leu Arg Leu Glu Gln Glu Arg Thr Gln Trp Ala
130    135    140
Gln Tyr Arg Glu Tyr Ala Glu Arg Glu Ile Ala Asp Leu Arg Arg Arg
145    150    155    160
Leu Ser Glu Gly Gln Glu Glu Asn Leu Glu Asn Glu Met Lys Lys
165    170    175
Ala Gln Glu Asp Ala Glu Lys Leu Arg Ser Val Val Met Pro Met Glu
180    185    190
Lys Glu Ile Ala Ala Leu Lys Asp Lys Leu Thr Glu Ala Glu Asp Lys
195    200    205
Ile Lys Glu Leu Glu Ala Ser Lys Val Lys Glu Leu Asn His Tyr Leu
210    215    220
Glu Ala Glu Lys Ser Cys Arg Thr Asp Leu Glu Met Tyr Val Ala Val
225    230    235    240
Leu Asn Thr Gln Lys Ser Val Leu Gln Glu Asp Ala Glu Lys Leu Arg
245    250    255
Lys Glu Leu His Glu Val Cys His Leu Leu Glu Gln Glu Arg Gln Gln
260    265    270
His Asn Gln Leu Lys His Thr Trp Gln Lys Ala Asn Asp Gln Phe Leu
275    280    285
Glu Ser Gln Arg Leu Leu Met Arg Asp Met Gln Arg Met Glu Ile Val

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290 295 300  
 Leu Thr Ser Glu Gln Leu Arg Gln Val Glu Glu Leu Lys Lys Lys Asp  
 305 310 315 320  
 Gln Glu Asp Asp Glu Gln Gln Arg Leu Asn Lys Arg Lys Asp His Lys  
 325 330 335  
 Lys Ala Asp Val Glu Glu Glu Ile Lys Ile Pro Val Val Cys Ala Leu  
 340 345 350  
 Thr Gln Glu Glu Ser Ser Ala Gln Leu Ser Asn Glu Glu Glu His Leu  
 355 360 365  
 Asp Ser Thr Arg Gly Ser Val His Ser Leu Asp Ala Gly Leu Leu Leu  
 370 375 380  
 Pro Ser Gly Asp Pro Phe Ser Lys Ser Asp Asn Asp Met Phe Lys Asp  
 385 390 395 400  
 Gly Leu Arg Arg Ala Gln Ser Thr Asp Ser Leu Gly Thr Ser Gly Ser  
 405 410 415  
 Leu Gln Ser Lys Ala Leu Gly Tyr Asn Tyr Lys Ala Lys Ser Ala Gly  
 420 425 430  
 Asn Leu Asp Glu Ser Asp Phe Gly Pro Leu Val Gly Ala Asp Ser Val  
 435 440 445  
 Ser Glu Asn Phe Asp Thr Ala Ser Leu Gly Ser Leu Gln Met Pro Ser  
 450 455 460  
 Gly Phe Met Leu Thr Lys Asp Gln Glu Arg Ala Ile Lys Ala Met Thr  
 465 470 475 480  
 Pro Glu Gln Glu Glu Thr Ala Ser Leu Leu Ser Ser Val Thr Gln Gly  
 485 490 495  
 Met Glu Ser Ala Tyr Val Ser Pro Ser Gly Tyr Arg Leu Val Ser Glu  
 500 505 510  
 Thr Glu Trp Asn Leu Leu Gln Lys Glu Val His Asn Ala Gly Asn Lys  
 515 520 525  
 Leu Gly Arg Arg Cys Asp Met Cys Ser Asn Tyr Glu Lys Gln Leu Gln  
 530 535 540  
 Gly Ile Gln Ile Gln Glu Ala Glu Thr Arg Asp Gln Val Lys Lys Leu  
 545 550 555 560  
 Gln Leu Met Leu Arg Gln Ala Asn Asp Gln Leu Glu Lys Thr Met Lys  
 565 570 575  
 Asp Lys Gln Glu Leu Glu Asp Phe Ile Lys Gln Ser Ser Glu Asp Ser  
 580 585 590  
 Ser His Gln Ile Ser Ala Leu Val Leu Arg Ala Gln Ala Ser Glu Ile  
 595 600 605  
 Leu Leu Glu Glu Leu Gln Gln Gly Leu Ser Gln Ala Lys Arg Asp Val  
 610 615 620  
 Gln Glu Gln Met Ala Val Leu Met Gln Ser Arg Glu Gln Val Ser Glu  
 625 630 635 640  
 Glu Leu Val Arg Leu Gln Lys Asp Asn Asp Ser Leu Gln Gly Lys His  
 645 650 655  
 Ser Leu His Val Ser Leu Gln Gln Ala Glu Asp Phe Ile Leu Pro Asp  
 660 665 670  
 Thr Thr Glu Ala Leu Arg Glu Leu Val Leu Lys Tyr Arg Glu Asp Ile  
 675 680 685  
 Ile Asn Val Arg Thr Ala Ala Asp His Val Glu Glu Lys Leu Lys Ala  
 690 695 700  
 Glu Ile Leu Phe Leu Lys Glu Gln Ile Gln Ala Glu Gln Cys Leu Lys  
 705 710 715 720  
 Glu Asn Leu Glu Glu Thr Leu Gln Leu Glu Ile Glu Asn Cys Lys Glu  
 725 730 735

Glu Ile Ala Ser Ile Ser Ser Leu Lys Ala Glu Leu Glu Arg Ile Lys  
                   740                  745                  750  
 Val Glu Lys Gly Gln Leu Glu Ser Thr Leu Arg Glu Lys Ser Gln Gln  
                   755                  760                  765  
 Leu Glu Ser Leu Gln Glu Ile Lys Ile Ser Leu Glu Glu Gln Leu Lys  
                   770                  775                  780  
 Lys Glu Thr Ala Ala Lys Ala Thr Val Glu Gln Leu Met Phe Glu Glu  
                   785                  790                  795                  800  
 Lys Asn Lys Ala Gln Arg Leu Gln Thr Glu Leu Asp Val Ser Glu Gln  
                   805                  810                  815  
 Val Gln Arg Asp Phe Val Lys Leu Ser Gln Thr Leu Gln Val Gln Leu  
                   820                  825                  830  
 Glu Arg Ile Arg Gln Ala Asp Ser Leu Glu Arg Ile Arg Ala Ile Leu  
                   835                  840                  845  
 Asn Asp Thr Lys Leu Thr Asp Ile Asn Gln Leu Pro Glu Thr  
                   850                  855                  860

<210> 123  
 <211> 544  
 <212> DNA  
 <213> Homo Sapiens

<400> 123  
 gggagtggcg tggcgaggg atggcacaaa agaaatatct tcaagcaaaa ttgacccagt 60  
 ttttaagggg agacaggatt caactttgga aacctccata tacagatgaa aataaaaaag 120  
 ttggtttggc attaaaggac cttgctaagc agtactctga cagactagaa tgctgtgaaa 180  
 atgaagtaga aaaggttaata gaagaaatac gttgcaaggc aattgagcgt ggaacaggaa 240  
 atgacaatta tagaacaacg ggaattgcta caatcgaggt gtttttacca ccaagactaa 300  
 aaaaagatag gaaaaacttg ttggagaccc gattgcacat cactggcaga gaactgaggt 360  
 ccaaaatagc tgaaaccttt ggacttcaag aanattatat caaaattgtc ataaataaga 420  
 agcaactacn actagggaaa acccttgaag ancaaggcgt ggctcacaat gtgaaagcga 480  
 tgggtgcttga actaaaacaa tctgaagagg acgcgaggaa aaacttccag ttagaggaag 540  
 agga 544

<210> 124  
 <211> 178  
 <212> PRT  
 <213> Homo Sapiens

<400> 124  
 Glu Trp Arg Gly Ala Gly Met Ala Gln Lys Lys Tyr Leu Gln Ala Lys  
   1                  5                  10                  15  
 Leu Thr Gln Phe Leu Arg Glu Asp Arg Ile Gln Leu Trp Lys Pro Pro  
                   20                  25                  30  
 Tyr Thr Asp Glu Asn Lys Lys Val Gly Leu Ala Leu Lys Asp Leu Ala  
                   35                  40                  45  
 Lys Gln Tyr Ser Asp Arg Leu Glu Cys Cys Glu Asn Glu Val Glu Lys  
                   50                  55                  60  
 Val Ile Glu Glu Ile Arg Cys Lys Ala Ile Glu Arg Gly Thr Gly Asn  
   65                  70                  75                  80  
 Asp Asn Tyr Arg Thr Thr Gly Ile Ala Thr Ile Glu Val Phe Leu Pro  
                   85                  90                  95  
 Pro Arg Leu Lys Lys Asp Arg Lys Asn Leu Leu Glu Thr Arg Leu His  
                   100                  105                  110  
 Ile Thr Gly Arg Glu Leu Arg Ser Lys Ile Ala Glu Thr Phe Gly Leu

115 120 125  
 Gln Glu Tyr Ile Lys Ile Val Ile Asn Lys Lys Gln Leu Leu Gly Lys  
 130 135 140  
 Thr Leu Glu Gln Gly Val Ala His Asn Val Lys Ala Met Val Leu Glu  
 145 150 155 160  
 Leu Lys Gln Ser Glu Glu Asp Ala Arg Lys Asn Phe Gln Leu Glu Glu  
 165 170 175  
 Glu Glu

<210> 125  
 <211> 1302  
 <212> DNA  
 <213> Homo Sapiens

<400> 125  
 atggaggtgg tggacccgca gcagctgggc atgttcacgg agggcgagct gatgtcggtg 60  
 ggtatggaca cgttcaccca ccgcatcgac tccaccgagg tcacctacca gccgcgccgc 120  
 aagcgggcca agctcatcgg caagtacctg atggggggacc tgctggggga aggctcttac 180  
 ggcaaggtga aggaggtgct ggactcggag acgctgtgca ggagggccgt caagatcctc 240  
 aagaagaaga agttgcgaag gatccccaac ggggaggcca acgtgaagaa ggaaattcaa 300  
 ctactgagga ggttacggca caaaaatgtc atccagctgg tggatgtgtt atacaacgaa 360  
 gagaagcaga aaatgtatat ggtgatggag tactgcgtgt gtggcatgca ggaaatgctg 420  
 gacagcgtgc cggagaagcg tttcccagtg tgccaggccc acgggtactt ctgtcagctg 480  
 attgacggcc tggagtacct gcatagccag ggcattgtgc acaaggacat caagccgggg 540  
 aacctgctgc tcaccaccgg tggcaccctc aaaatctccg acctgggctg gcccgaggca 600  
 ctgcaccctg tcgcggcgga cgacacctgc cggaccagcc agggctcccc ggctttccag 660  
 ccgcccagga ttgccaacgg cctggacacc ttctccggct tcaaggtgga catctggctg 720  
 gctgggggtca cctctacaa catcaccacg ggtctgtacc ctttcgaagg ggacaacatc 780  
 tacaagttgt ttgagaacat cgggaagggg agctacgcca tcccgggcga ctgtggcccc 840  
 ccgctctctg acctgctgaa agggatgctt gactacgaac cggccaagag gttctccatc 900  
 cggcagatcc ggcagcacag ctggttccgg aagaaacatc ctccggctga agcaccagtg 960  
 cccatcccac cgagcccaga caccaaggac cggtgggcga gcatgactgt ggtgccgtac 1020  
 ttggaggacc tgcacggcgc ggacgaggac gaggacctct tcgacatcga ggatgacatc 1080  
 atctacactc aggacttcac ggtgcccgga cagggtcccag aagaggaggc cagtcaaat 1140  
 ggacagcgcc ggggcctccc caaggccgtg tgtatgaacg gcacagaggc ggcgcagctg 1200  
 agcaccaaatt ccagggcgga gggccgggccc cccaaccttg cccgcaaggc ctgctccgcc 1260  
 agcagcaaga tccgccggct gtcggcctgc aagcagcagt ga 1302

<210> 126  
 <211> 433  
 <212> PRT  
 <213> Homo Sapiens

<400> 126  
 Met Glu Val Val Asp Pro Gln Gln Leu Gly Met Phe Thr Glu Gly Glu  
 1 5 10 15  
 Leu Met Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr  
 20 25 30  
 Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys  
 35 40 45  
 Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys  
 50 55 60  
 Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu  
 65 70 75 80



Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys  
 85 90 95  
 Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Lys Asn Val Ile Gln  
 100 105 110  
 Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val  
 115 120 125  
 Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro  
 130 135 140  
 Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Cys Gln Leu  
 145 150 155 160  
 Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp  
 165 170 175  
 Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Gly Gly Thr Leu Lys Ile  
 180 185 190  
 Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Ala Asp Asp  
 195 200 205  
 Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile  
 210 215 220  
 Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser  
 225 230 235 240  
 Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu  
 245 250 255  
 Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Lys Gly Ser Tyr  
 260 265 270  
 Ala Ile Pro Gly Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Lys Gly  
 275 280 285  
 Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg  
 290 295 300  
 Gln His Ser Trp Phe Arg Lys Lys His Pro Pro Ala Glu Ala Pro Val  
 305 310 315 320  
 Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr  
 325 330 335  
 Val Val Pro Tyr Leu Glu Asp Leu His Gly Ala Asp Glu Asp Glu Asp  
 340 345 350  
 Leu Phe Asp Ile Glu Asp Asp Ile Ile Tyr Thr Gln Asp Phe Thr Val  
 355 360 365  
 Pro Gly Gln Val Pro Glu Glu Glu Ala Ser His Asn Gly Gln Arg Arg  
 370 375 380  
 Gly Leu Pro Lys Ala Val Cys Met Asn Gly Thr Glu Ala Ala Gln Leu  
 385 390 395 400  
 Ser Thr Lys Ser Arg Ala Glu Gly Arg Ala Pro Asn Pro Ala Arg Lys  
 405 410 415  
 Ala Cys Ser Ala Ser Ser Lys Ile Arg Arg Leu Ser Ala Cys Lys Gln  
 420 425 430  
 Gln

&lt;210&gt; 127

&lt;211&gt; 1488

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 127

gaggggagg gcggtgccgg caagatggct gcgcccgaga agatgacgtt tcccagagaaa  
 ccaagccaca aaaagtacag ggccgccctg aagaaggaga aacgaaagaa acgtcggcag

60  
120

```

gaacttgctc gactgagaga ctcaggactc tcacagaagg aggaagagga ggacactttt 180
attgaagaac aacaactaga agaagagaag ctattggaaa gagagaggca aagattacat 240
gaggagtggg tgctaagaga gcagaaggca caagaagaat tcagaataaa gaagggaaaag 300
gaagaggcgg ctaaaaaacg gcaagaagaa caagagagaa agttaagga acaatgggaa 360
gaacagcaga ggaaagagag agaagaggag gagcagaaac gacaggagaa gaaagaaaaa 420
gaggaagctt tgcagaagat gctggatcag gctgaaaatg agttggaaaaa tggtaggaca 480
tggaacaaac cagaaccacc cgtggatttc agagtaatgg agaaggatcg agctaattgt 540
cccttctaca gtaaaacagg agcttgacga tttggagata gatgttcacg taaacataat 600
ttcccaacat ccagtcctac ccttcttatt aagagcatgt ttacgacgtt tgggaatggag 660
cagtgcagga gggatgacta tgaccctgac gcaagcctgg agtacagcga ggaagaaacc 720
taccaacagt tcttagactt ctatgaggat gtgttgcccg agttcaagaa cgtgggggaa 780
gtgattcagt tcaaggctcag ctgcaatttg gaacctcacc tgagggggcaa tgtatatgtt 840
cagtaccagt cggaagaaga atgccaagca gccctttctc tgtttaacgg acgatggtat 900
gcaggacgac agctgcagtg tgaattctgc cccgtgaccc ggtgggaaaat ggcgatttgt 960
ggtttatttg aaatacaaca atgtccaaga ggaaagcact gcaactttct tcatgtgttc 1020
agaaatccca acaatgaatt ctgggaagct aatagagaca tctacttgct tccagatcgg 1080
actggctcct cctttgggaa gaactccgaa aggagggaga ggatgggcca ccacgacgac 1140
tactacagca ggctgcgggg aaggagaaac cctagtcctg accactccta caaaagaaat 1200
ggggaatccg agagggaaaag tagtcgtcac agggggaaga aatctcacia acgcacatca 1260
aagagtcggg agaggcacia ttcacgaagc agaggaagaa atagggaccg cagcaggggac 1320
cgcagccggg gccggggcgag ccggagccgg agccggagcc ggagccgcag gagccgccgc 1380
agccggagcc aaagtctctc taggtcccga agtcgtggca ggaggagggt gggtaataga 1440
gacagaactg ttcagagtcc caaatccaaa taaactagtt ttgttctt 1488

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&lt;210&gt; 128

&lt;211&gt; 482

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 128

```

Met Ala Ala Pro Glu Lys Met Thr Phe Pro Glu Lys Pro Ser His Lys
1          5          10          15
Lys Tyr Arg Ala Ala Leu Lys Lys Glu Lys Arg Lys Lys Arg Arg Gln
20          25          30
Glu Leu Ala Arg Leu Arg Asp Ser Gly Leu Ser Gln Lys Glu Glu Glu
35          40          45
Glu Asp Thr Phe Ile Glu Glu Gln Gln Leu Glu Glu Glu Lys Leu Leu
50          55          60
Glu Arg Glu Arg Gln Arg Leu His Glu Glu Trp Leu Leu Arg Glu Gln
65          70          75          80
Lys Ala Gln Glu Glu Phe Arg Ile Lys Lys Glu Lys Glu Glu Ala Ala
85          90          95
Lys Lys Arg Gln Glu Glu Gln Glu Arg Lys Leu Lys Glu Gln Trp Glu
100          105          110
Glu Gln Gln Arg Lys Glu Arg Glu Glu Glu Glu Gln Lys Arg Gln Glu
115          120          125
Lys Lys Glu Lys Glu Glu Ala Leu Gln Lys Met Leu Asp Gln Ala Glu
130          135          140
Asn Glu Leu Glu Asn Gly Thr Thr Trp Gln Asn Pro Glu Pro Pro Val
145          150          155          160
Asp Phe Arg Val Met Glu Lys Asp Arg Ala Asn Cys Pro Phe Tyr Ser
165          170          175
Lys Thr Gly Ala Cys Arg Phe Gly Asp Arg Cys Ser Arg Lys His Asn
180          185          190
Phe Pro Thr Ser Ser Pro Thr Leu Leu Ile Lys Ser Met Phe Thr Thr

```

195	200	205
Phe Gly Met Glu Gln Cys Arg Arg Asp Asp Tyr Asp Pro Asp Ala Ser		
210	215	220
Leu Glu Tyr Ser Glu Glu Thr Tyr Gln Gln Phe Leu Asp Phe Tyr		
225	230	235
Glu Asp Val Leu Pro Glu Phe Lys Asn Val Gly Lys Val Ile Gln Phe		240
	245	250
Lys Val Ser Cys Asn Leu Glu Pro His Leu Arg Gly Asn Val Tyr Val		255
	260	265
Gln Tyr Gln Ser Glu Glu Glu Cys Gln Ala Ala Leu Ser Leu Phe Asn		270
	275	280
Gly Arg Trp Tyr Ala Gly Arg Gln Leu Gln Cys Glu Phe Cys Pro Val		285
	290	295
Thr Arg Trp Lys Met Ala Ile Cys Gly Leu Phe Glu Ile Gln Gln Cys		300
305	310	315
Pro Arg Gly Lys His Cys Asn Phe Leu His Val Phe Arg Asn Pro Asn		320
	325	330
Asn Glu Phe Trp Glu Ala Asn Arg Asp Ile Tyr Leu Ser Pro Asp Arg		335
	340	345
Thr Gly Ser Ser Phe Gly Lys Asn Ser Glu Arg Arg Glu Arg Met Gly		350
	355	360
His His Asp Asp Tyr Tyr Ser Arg Leu Arg Gly Arg Arg Asn Pro Ser		365
	370	375
Pro Asp His Ser Tyr Lys Arg Asn Gly Glu Ser Glu Arg Lys Ser Ser		380
385	390	395
Arg His Arg Gly Lys Lys Ser His Lys Arg Thr Ser Lys Ser Arg Glu		400
	405	410
Arg His Asn Ser Arg Ser Arg Gly Arg Asn Arg Asp Arg Ser Arg Asp		415
	420	425
Arg Ser Arg Gly Arg Gly Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg		430
	435	440
Arg Ser Arg Arg Ser Arg Ser Gln Ser Ser Ser Arg Ser Arg Ser Arg		445
	450	455
Gly Arg Arg Arg Ser Gly Asn Arg Asp Arg Thr Val Gln Ser Pro Lys		460
465	470	475
Ser Lys		480

<210> 129  
 <211> 1663  
 <212> DNA  
 <213> Homo Sapiens

<400> 129  
 aggccttgag ccaactccgg gtgctctgct gtgagtggct gaggcccgag atccacacca 60  
 aggagcagat cctggagcta ctggtgctgg agcagttcct gaccatcctg ccccaggagc 120  
 tccaggcctg ggtgcaggag cattgcccg agagcgctga agaggctgtc actctcctcg 180  
 aagatctgga gcggaactg gatgagccag gacaccaggt ctcaactcct ccaaacgaac 240  
 agaaaccggt gtgggagaag atatcctcct caggaactgc aaaggaatcc ccgagcagca 300  
 tgcagccaca gcccttgagg accagtcaca aatacagatc ttggggggccc ctgtacatcc 360  
 aagagtctgg ttaggagcag gagttcgtc aagatccaag aaaggtccga gattgcagat 420  
 tgagtaccca gcacgaggaa tcagcagatg agcagaaagg ttctgaagca gaggggctca 480  
 aaggggatata aatttctgtg attatcgcca ataaacctga ggccagctta gagaggcagt 540  
 gcgtaaacct tgaatatgaa aaaggaacaa aacccctctt tcaagaggca ggctccaaga 600  
 aaggtagaga atcagttcct actaaacctt ccccaagaga gagacgttat atatgtgctg 660

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aatgtggcaa agccttttagt aatagctcaa atctcaccaa acacaggaga acacacactg      720
gggagaaacc ttacgtgtgc accaagtgtg ggaaagcttt cagccacagc tcaaacctca      780
ccctccacta cagaacacac ttggtggacc ggcctatga ctgtaagtgt ggaaaagctt      840
ttgggcagag ctcagacctt cttaaaccatc agagaatgca cacagaagag gcgccatatac      900
agtgcaaaga ttgtggcaag gctttcagcg ggaaaggcag cctcattcgt cactatcgga      960
tccacactgg ggagaagcct tatcagtgtg acgaatgtgg gaagagcttc agtcagcatg     1020
cgggcctcag ctcccaccag agactccaca cgggagagaa gccatataag tgtaaggagt     1080
gtgggaaagc cttcaaccac agctccaact tcaataaaca ccacagaatc cacaccgggg      1140
aaaagcccta ctggtgtcat cactgtggaa agaccttctg tagcaagtc aatctttcca      1200
aacatcagcg agtccacact ggagagggag aagcaccgta actttcaagc gctcctgttg      1260
ttgtcgttgt tttaaacttt agaactctgaa aaccagaaag aagtcttgct attgcagcag      1320
catcgattcc ggtgatagag tttgtatcac tcaacatcag gggatgcctg aggagtgcga      1380
gctccacagc aacatggcag gcaggaggct ctcagaaggt gtcaggagggt tccacactcg      1440
ccagttcact ggagcagagt cccttcgcca cacttagggt cccagtaagc catgccagca      1500
ttaccttttg cgtagttaaa cagacgtgta tccagtctag ttaaggaaga aacattaaga      1560
ttgtttaatt tttacatat attcaagaat ttttaattgt aaagaattga gccacattga      1620
acacaattga atgagattca gaataaactt ataacatctt aaa                        1663

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&lt;210&gt; 130

&lt;211&gt; 412

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 130

```

Ala Leu Ser Gln Leu Arg Val Leu Cys Cys Glu Trp Leu Arg Pro Glu
 1              5              10              15
Ile His Thr Lys Glu Gln Ile Leu Glu Leu Leu Val Leu Glu Gln Phe
      20              25              30
Leu Thr Ile Leu Pro Gln Glu Leu Gln Ala Trp Val Gln Glu His Cys
      35              40              45
Pro Glu Ser Ala Glu Glu Ala Val Thr Leu Leu Glu Asp Leu Glu Arg
      50              55              60
Glu Leu Asp Glu Pro Gly His Gln Val Ser Thr Pro Pro Asn Glu Gln
      65              70              75              80
Lys Pro Val Trp Glu Lys Ile Ser Ser Ser Gly Thr Ala Lys Glu Ser
      85              90              95
Pro Ser Ser Met Gln Pro Gln Pro Leu Glu Thr Ser His Lys Tyr Glu
      100             105             110
Ser Trp Gly Pro Leu Tyr Ile Gln Glu Ser Gly Glu Glu Gln Glu Phe
      115             120             125
Ala Gln Asp Pro Arg Lys Val Arg Asp Cys Arg Leu Ser Thr Gln His
      130             135             140
Glu Glu Ser Ala Asp Glu Gln Lys Gly Ser Glu Ala Glu Gly Leu Lys
      145             150             155             160
Gly Asp Ile Ile Ser Val Ile Ile Ala Asn Lys Pro Glu Ala Ser Leu
      165             170             175
Glu Arg Gln Cys Val Asn Leu Glu Asn Glu Lys Gly Thr Lys Pro Pro
      180             185             190
Leu Gln Glu Ala Gly Ser Lys Lys Gly Arg Glu Ser Val Pro Thr Lys
      195             200             205
Pro Thr Pro Gly Glu Arg Arg Tyr Ile Cys Ala Glu Cys Gly Lys Ala
      210             215             220
Phe Ser Asn Ser Ser Asn Leu Thr Lys His Arg Arg Thr His Thr Gly
      225             230             235             240
Glu Lys Pro Tyr Val Cys Thr Lys Cys Gly Lys Ala Phe Ser His Ser

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                245                250                255
Ser Asn Leu Thr Leu His Tyr Arg Thr His Leu Val Asp Arg Pro Tyr
                260                265                270
Asp Cys Lys Cys Gly Lys Ala Phe Gly Gln Ser Ser Asp Leu Leu Lys
                275                280                285
His Gln Arg Met His Thr Glu Glu Ala Pro Tyr Gln Cys Lys Asp Cys
                290                295                300
Gly Lys Ala Phe Ser Gly Lys Gly Ser Leu Ile Arg His Tyr Arg Ile
305                310                315                320
His Thr Gly Glu Lys Pro Tyr Gln Cys Asn Glu Cys Gly Lys Ser Phe
                325                330                335
Ser Gln His Ala Gly Leu Ser Ser His Gln Arg Leu His Thr Gly Glu
                340                345                350
Lys Pro Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe Asn His Ser Ser
                355                360                365
Asn Phe Asn Lys His His Arg Ile His Thr Gly Glu Lys Pro Tyr Trp
                370                375                380
Cys His His Cys Gly Lys Thr Phe Cys Ser Lys Ser Asn Leu Ser Lys
385                390                395                400
His Gln Arg Val His Thr Gly Glu Gly Glu Ala Pro
                405                410

```

<210> 131  
 <211> 724  
 <212> DNA  
 <213> Homo Sapiens

```

<400> 131
ggagaatgaa aagcagaaag tggcagagct gtattctatc cataactctg gagacaaatc      60
tgatattcag gacctcctgg agagtgtcag gctggacaaa gaaaaagcag agactttggc      120
tagtagcttg caggaagatc tggctcatac ccgaaatgat gccaatcgat tacaggatgc      180
cattgctaag gtagaggatg aataccgagc cttccaagaa gaagctaaga aacaaattga      240
agatttgaat atgacgttag aaaaattaag atcagacctg gatgaaaaag aaacagaaag      300
gagtgcacat aaagaaacca tctttgaact tgaagatgaa gtagaacaac atcgtgctgt      360
gaaacttcat gacaacctca ttatttctga tctagagaat acagttaaaa aactccagga      420
ccaaaagcac gacatggaaa gagaaataaa gacactccac agaagacttc gggaagaatc      480
tgcggaatgg cggcagtttc aggctgatct ccagactgca gtagtcattg caaatgacat      540
taaactctgaa gcccaagagg agattggtga tctaaagcgc cgggtacatg aggctcaaga      600
aaaaaatgag aaactcacia aagaattgga ggaaataagt ccgccaagcc agaangac      660
gangccggtg ttccantaca tgnatgcccg tgagagagaa ttggcaggc ctttaaggcag      720
ggaa

```

<210> 132  
 <211> 218  
 <212> PRT  
 <213> Homo Sapiens

```

<400> 132
Glu Asn Glu Lys Gln Lys Val Ala Glu Leu Tyr Ser Ile His Asn Ser
1                5                10                15
Gly Asp Lys Ser Asp Ile Gln Asp Leu Leu Glu Ser Val Arg Leu Asp
                20                25                30
Lys Glu Lys Ala Glu Thr Leu Ala Ser Ser Leu Gln Glu Asp Leu Ala
                35                40                45
His Thr Arg Asn Asp Ala Asn Arg Leu Gln Asp Ala Ile Ala Lys Val

```

```

      50              55              60
Glu Asp Glu Tyr Arg Ala Phe Gln Glu Glu Ala Lys Lys Gln Ile Glu
65              70              75              80
Asp Leu Asn Met Thr Leu Glu Lys Leu Arg Ser Asp Leu Asp Glu Lys
      85              90              95
Glu Thr Glu Arg Ser Asp Met Lys Glu Thr Ile Phe Glu Leu Glu Asp
      100             105             110
Glu Val Glu Gln His Arg Ala Val Lys Leu His Asp Asn Leu Ile Ile
      115             120             125
Ser Asp Leu Glu Asn Thr Val Lys Lys Leu Gln Asp Gln Lys His Asp
      130             135             140
Met Glu Arg Glu Ile Lys Thr Leu His Arg Arg Leu Arg Glu Glu Ser
145             150             155             160
Ala Glu Trp Arg Gln Phe Gln Ala Asp Leu Gln Thr Ala Val Val Ile
      165             170             175
Ala Asn Asp Ile Lys Ser Glu Ala Gln Glu Glu Ile Gly Asp Leu Lys
      180             185             190
Arg Arg Val His Glu Ala Gln Glu Lys Asn Glu Lys Leu Thr Lys Glu
      195             200             205
Leu Glu Glu Ile Ser Pro Pro Ser Gln Lys
      210             215

```

<210> 133  
 <211> 719  
 <212> DNA  
 <213> Homo Sapiens

```

<400> 133
gagaactaca gagctgggtg cggggccaac ggccagaaag tggcgaggag gcagtgcgc      60
tggtggaggg tttgcagaaa caaccagga gaccaaggcg gtgactgtcc atgttcacgg      120
ccaggaagtc ctgtcagagg agacggtgca tttaggagcg gagcctgagt cacctaata      180
gctgcaggat cctgtgcaaa gctcgacccc cgagcagtc cctgaggaaa ccacacagag      240
cccagatctg ggggcaccgg cagagcagcg tccacaccag gaagaggagc tccagaccct      300
gcaggagagc gaggtcccag tgcccagga cccagacctt cctgcagaga ggagctctgg      360
agactcagag atggttgctc ttcttactgc tctgtcacag ggactggtaa cgttcaagga      420
tgtggccgta tgcttttccc aggaccagtg gagtgatctg gacccaacac agaaagagtt      480
ctatggagaa tatgtcttgg aagaagactg tggaattggt gtctctctgt catttccaat      540
ccccagacct gatgagatct cccagggttag agaggaagag cccttgggtc ccagatatcc      600
aagagcctna ggagactcaa gagccagaaa tcctgagttt tacctacaca ggagatagga      660
gtnaagatga aggaaaatgt ctggagccag gaagaatctg agtttggagg atataccca      719

```

<210> 134  
 <211> 217  
 <212> PRT  
 <213> Homo Sapiens

```

<400> 134
Arg Thr Thr Glu Leu Gly Ala Gly Pro Thr Ala Arg Lys Trp Arg Gly
1              5              10              15
Gly Ser Asp Ala Gly Gly Gly Phe Ala Glu Thr Thr Gln Glu Thr Lys
      20              25              30
Ala Val Thr Val His Val His Gly Gln Glu Val Leu Ser Glu Glu Thr
      35              40              45
Val His Leu Gly Ala Glu Pro Glu Ser Pro Asn Glu Leu Gln Asp Pro
      50              55              60

```

Val Gln Ser Ser Thr Pro Glu Gln Ser Pro Glu Glu Thr Thr Gln Ser  
 65 70 75 80  
 Pro Asp Leu Gly Ala Pro Ala Glu Gln Arg Pro His Gln Glu Glu Glu  
 85 90 95  
 Leu Gln Thr Leu Gln Glu Ser Glu Val Pro Val Pro Glu Asp Pro Asp  
 100 105 110  
 Leu Pro Ala Glu Arg Ser Ser Gly Asp Ser Glu Met Val Ala Leu Leu  
 115 120 125  
 Thr Ala Leu Ser Gln Gly Leu Val Thr Phe Lys Asp Val Ala Val Cys  
 130 135 140  
 Phe Ser Gln Asp Gln Trp Ser Asp Leu Asp Pro Thr Gln Lys Glu Phe  
 145 150 155 160  
 Tyr Gly Glu Tyr Val Leu Glu Glu Asp Cys Gly Ile Val Val Ser Leu  
 165 170 175  
 Ser Phe Pro Ile Pro Arg Pro Asp Glu Ile Ser Gln Val Arg Glu Glu  
 180 185 190  
 Glu Pro Leu Gly Pro Arg Tyr Pro Arg Ala Gly Asp Ser Arg Ala Arg  
 195 200 205  
 Asn Pro Glu Phe Tyr Leu His Arg Arg  
 210 215

<210> 135  
 <211> 1027  
 <212> DNA  
 <213> Homo Sapiens

<400> 135  
 gcgagggcg gggcgaggcg gtgctcatgg aggaggacct gatccagcag agcctggacg 60  
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 cgcacgtgct ggaaccggat gaggacctgc agcgctgca gctctcgcg cagcagctcc 180  
 aggtcacggg agacgccagc gagagcgccg aggacatctt cttccggcgg gccaaaggagg 240  
 gcatgggcca ggacgaggcg cagttcagcg tggagatgcc actcaccggc aaggcctacc 300  
 tgtggggccga caagtaccgg ccacgcaagc cgcgcttctt caaccgcgtg cacacgggct 360  
 tcgagtggaa caagtacaac cagacgcact acgactttga caaccacccg cccaagatcg 420  
 tgcaggggata caagttaaac atcttctacc ccgacctcat cgacaagcgc tccacgcccg 480  
 agtacttctt ggaggcctgc gccgacaaca aggatttctc catcctgcgc ttcacgcggg 540  
 gccgcctacg aggacatcgc tttcaagatc gtcaaccgcg agtgggaata ctngcaccgc 600  
 caccgcttcc gctgccagtt tgccaacggc attttccanc tgncttttca cttcaagcgc 660  
 tncgcctatc ggcggtgacg gccctgggga acggcaggcc aggagggccg agggccacac 720  
 ggggtgccaca gccaggtcg gagtggccca gccggcaggc ttgtttttca gcatccgacg 780  
 ggaacatctc caacagaagc aaaacggaaa gtgcctcccg gacccccaga gggccacca 840  
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 ggaaatagtt ccgtttgttt ctctaaaaag acttgtaggt gggaaaaaaa atcttttgg 960  
 ctcatggaat tggcctattg gcaagatcgc atgttttttt aataaacggt gtattttaga 1020  
 ataaaaa 1027

<210> 136  
 <211> 299  
 <212> PRT  
 <213> Homo Sapiens

<400> 136  
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 1 5 10 15  
 Ser Leu Asp Asp Tyr Asp Ala Gly Arg Tyr Ser Pro Arg Leu Leu Thr

20	25	30
Ala His Glu Leu Pro Leu Asp	Ala His Val Leu Glu Pro Asp Glu Asp	
35	40	45
Leu Gln Arg Leu Gln Leu Ser Arg Gln Gln Leu Gln Val Thr Gly Asp		
50	55	60
Ala Ser Glu Ser Ala Glu Asp Ile Phe Phe Arg Arg Ala Lys Glu Gly		
65	70	75
Met Gly Gln Asp Glu Ala Gln Phe Ser Val Glu Met Pro Leu Thr Gly		
85	90	95
Lys Ala Tyr Leu Trp Ala Asp Lys Tyr Arg Pro Arg Lys Pro Arg Phe		
100	105	110
Phe Asn Arg Val His Thr Gly Phe Glu Trp Asn Lys Tyr Asn Gln Thr		
115	120	125
His Tyr Asp Phe Asp Asn Pro Pro Pro Lys Ile Val Gln Gly Tyr Lys		
130	135	140
Phe Asn Ile Phe Tyr Pro Asp Leu Ile Asp Lys Arg Ser Thr Pro Glu		
145	150	155
Tyr Phe Leu Glu Ala Cys Ala Asp Asn Lys Asp Phe Ala Ile Leu Arg		
165	170	175
Phe Thr Arg Gly Arg Leu Arg Gly His Arg Phe Gln Asp Arg Gln Pro		
180	185	190
Arg Val Gly Ile Leu Ala Pro Pro Arg Leu Pro Leu Pro Val Cys Gln		
195	200	205
Arg His Phe Pro Leu Ser Leu Gln Ala Leu Pro Leu Ser Ala Val Thr		
210	215	220
Ala Leu Gly Asn Gly Arg Pro Gly Gly Pro Arg Ala Thr Arg Val Pro		
225	230	235
Gln Pro Arg Ser Glu Trp Pro Ser Arg Gln Ala Cys Phe Ser Ala Ser		
245	250	255
Asp Gly Asn Ile Ser Asn Arg Ser Lys Thr Glu Ser Ala Ser Arg Thr		
260	265	270
Pro Arg Gly Pro Pro Asn Leu Thr Ser His Gln Pro Gln Thr Thr His		
275	280	285
Ser Pro Ser Gln Thr Pro Arg Leu Ile Trp Lys		
290	295	

&lt;210&gt; 137

&lt;211&gt; 766

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 137

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gtgaaagagtt	tccccctctct	ctggtggagc	aggtcattcc	catcattgac	ctaattggctc	360
gaacgagtg	tcatttttgc	agactgagag	atttcattca	attggaattc	ccacctggat	420
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<210> 138  
 <211> 243  
 <212> PRT  
 <213> Homo Sapiens

<400> 138  
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 Glu His Leu Thr Glu Glu Glu Lys Lys Arg Tyr Lys Asp Arg Asn Pro  
 20 25 30  
 Leu Glu Ser Leu Leu Gly Thr Val Glu His Gln Phe Gly Ala Gln Gly  
 35 40 45  
 Asp Leu Thr Thr Glu Cys Ala Thr Ala Asn Asn Pro Thr Ala Ile Thr  
 50 55 60  
 Pro Asp Glu Tyr Phe Asn Glu Glu Phe Asp Leu Lys Asp Arg Asp Ile  
 65 70 75 80  
 Gly Arg Pro Lys Glu Leu Thr Ile Arg Thr Gln Lys Phe Lys Ala Met  
 85 90 95  
 Leu Trp Met Cys Glu Glu Phe Pro Leu Ser Leu Val Glu Gln Val Ile  
 100 105 110  
 Pro Ile Ile Asp Leu Met Ala Arg Thr Ser Ala His Phe Ala Arg Leu  
 115 120 125  
 Arg Asp Phe Ile Lys Leu Glu Phe Pro Pro Gly Phe Pro Val Lys Ile  
 130 135 140  
 Ala Ser His Ile Thr Asn Phe Glu Val Asp Gln Ser Val Phe Glu Ile  
 145 150 155 160  
 Pro Glu Ser Tyr Tyr Val Gln Asp Asn Gly Arg Asn Val His Leu Gln  
 165 170 175  
 Asp Glu Asp Tyr Glu Ile Met Gln Phe Ala Ile Gln Gln Ser Leu Leu  
 180 185 190  
 Glu Ser Ser Arg Ser Gln Glu Leu Ser Gly Pro Ala Ser Asn Gly Gly  
 195 200 205  
 Ile Ser Gln Thr Asn Thr Tyr Asp Ala Gln Tyr Glu Arg Ala Gln Glu  
 210 215 220  
 Ser Leu Leu Pro Ala Gln Lys Ala Cys Ala Pro Ser Ala Pro Glu Arg  
 225 230 235 240  
 Asp Pro Phe

<210> 139  
 <211> 3060  
 <212> DNA  
 <213> Homo Sapiens

<400> 139  
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 cgcgcggggc gtggccagag tctggcggcg gcctggcgga gcggagagca gcgcccgcgc 180  
 ctgcgcgtgc ggaggagccc cgcacacaaat agcggcgcgc gcagcccgcg cccttcccc 240  
 cggcgcgccc cgccccgcgc gccgagcgcc ccgctccgcc tcacctgcca ccaggagtg 300  
 ggcgggcatt gttcgcgcgc gccgcgcgc cgcggggcca tgggggcccgc ccggcgcccgc 360  
 gggccggggc tggcgaggcc gccgcgcgc cgtgagacg ggccccgcgc gcagcccgcgc 420  
 ggcgcaggta aggcgggccc cgccatggtg gacccggtg gcttcgcgga ggcgtggaag 480  
 gcgcagttcc cggactcaga gccccgcgc atggagctgc gctcagtgga cgacatcgag 540  
 caggagctgg agcgtgcaa ggcctccatt cggcgccctg agcaggaggt gaaccaggag 600

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tccgcgtcgc gccccgcagc agcgcccgcc cagggagccg acccgccgcc cgccgaggag 780
cccaggcccc ggccccgacg cgagggttct ccgggtaagg ccaggccccg gaccgccccg 840
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&lt;210&gt; 140

&lt;211&gt; 872

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 140

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Met Val Asp Pro Val Gly Phe Ala Glu Ala Trp Lys Ala Gln Phe Pro
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Asp Ser Glu Pro Pro Arg Met Glu Leu Arg Ser Val Gly Asp Ile Glu
          20          25          30
Gln Glu Leu Glu Arg Cys Lys Ala Ser Ile Arg Arg Leu Glu Gln Glu
          35          40          45
Val Asn Gln Glu Arg Phe Arg Met Ile Tyr Leu Gln Thr Leu Leu Ala

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50					55					60					
Lys	Glu	Lys	Lys	Ser	Tyr	Asp	Arg	Gln	Arg	Trp	Gly	Phe	Arg	Arg	Ala
65					70					75					80
Ala	Gln	Ala	Pro	Asp	Gly	Ala	Ser	Glu	Pro	Arg	Ala	Ser	Ala	Ser	Arg
				85						90					95
Pro	Gln	Pro	Ala	Pro	Ala	Asp	Gly	Ala	Asp	Pro	Pro	Pro	Ala	Glu	Glu
			100						105				110		
Pro	Glu	Ala	Arg	Pro	Asp	Gly	Glu	Gly	Ser	Pro	Gly	Lys	Ala	Arg	Pro
		115					120					125			
Gly	Thr	Ala	Arg	Arg	Pro	Gly	Ala	Ala	Ala	Ser	Gly	Glu	Arg	Asp	Asp
	130					135					140				
Arg	Gly	Pro	Pro	Ala	Ser	Val	Ala	Ala	Leu	Arg	Ser	Asn	Phe	Glu	Arg
145					150					155					160
Ile	Arg	Lys	Gly	His	Gly	Gln	Pro	Gly	Ala	Asp	Ala	Glu	Lys	Pro	Phe
				165					170					175	
Tyr	Val	Asn	Val	Glu	Phe	His	His	Glu	Arg	Gly	Leu	Val	Lys	Val	Asn
		180						185					190		
Asp	Lys	Glu	Val	Ser	Asp	Arg	Ile	Ser	Ser	Leu	Gly	Ser	Gln	Ala	Met
	195						200					205			
Gln	Met	Glu	Arg	Lys	Lys	Ser	Gln	His	Gly	Ala	Gly	Ser	Ser	Val	Gly
	210					215					220				
Asp	Ala	Ser	Arg	Pro	Pro	Tyr	Arg	Gly	Arg	Ser	Ser	Glu	Ser	Ser	Cys
225					230					235					240
Gly	Val	Asp	Gly	Asp	Tyr	Glu	Asp	Ala	Glu	Leu	Asn	Pro	Arg	Phe	Leu
			245						250					255	
Lys	Asp	Asn	Leu	Ile	Asp	Ala	Asn	Gly	Gly	Ser	Arg	Pro	Pro	Trp	Pro
		260						265					270		
Pro	Leu	Glu	Tyr	Gln	Pro	Tyr	Gln	Ser	Ile	Tyr	Val	Gly	Gly	Met	Met
	275						280					285			
Glu	Gly	Glu	Gly	Lys	Gly	Pro	Leu	Leu	Arg	Ser	Gln	Ser	Thr	Ser	Glu
	290					295					300				
Gln	Glu	Lys	Arg	Leu	Thr	Trp	Pro	Arg	Arg	Ser	Tyr	Ser	Pro	Arg	Ser
305					310					315					320
Phe	Glu	Asp	Cys	Gly	Gly	Gly	Tyr	Thr	Pro	Asp	Cys	Ser	Ser	Asn	Glu
			325						330					335	
Asn	Leu	Thr	Ser	Ser	Glu	Glu	Asp	Phe	Ser	Ser	Gly	Gln	Ser	Ser	Arg
		340						345					350		
Val	Ser	Pro	Ser	Pro	Thr	Thr	Tyr	Arg	Met	Phe	Arg	Asp	Lys	Ser	Arg
	355						360					365			
Ser	Pro	Ser	Gln	Asn	Ser	Gln	Gln	Ser	Phe	Asp	Ser	Ser	Ser	Pro	Pro
	370					375				380					
Thr	Pro	Gln	Cys	His	Lys	Arg	His	Arg	His	Cys	Pro	Val	Val	Val	Ser
385					390					395					400
Glu	Ala	Thr	Ile	Val	Gly	Val	Arg	Lys	Thr	Gly	Gln	Ile	Trp	Pro	Asn
			405						410					415	
Asp	Gly	Glu	Gly	Ala	Phe	His	Gly	Asp	Ala	Asp	Gly	Ser	Phe	Gly	Thr
		420						425					430		
Pro	Pro	Gly	Tyr	Gly	Cys	Ala	Ala	Asp	Arg	Ala	Glu	Glu	Gln	Arg	Arg
	435						440					445			
His	Gln	Asp	Gly	Leu	Pro	Tyr	Ile	Asp	Asp	Ser	Pro	Ser	Ser	Ser	Pro
	450					455				460					
His	Leu	Ser	Ser	Lys	Gly	Arg	Gly	Ser	Arg	Asp	Ala	Leu	Val	Ser	Gly
465					470					475					480
Ala	Leu	Glu	Ser	Thr	Lys	Ala	Ser	Glu	Leu	Asp	Leu	Glu	Lys	Gly	Leu
				485					490					495	

Glu Met Arg Lys Trp Val Leu Ser Gly Ile Leu Ala Ser Glu Glu Thr  
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 Tyr Leu Ser His Leu Glu Ala Leu Leu Pro Met Lys Pro Leu Lys  
 515 520 525  
 Ala Ala Ala Thr Thr Ser Gln Pro Val Leu Thr Ser Gln Gln Ile Glu  
 530 535 540  
 Thr Ile Phe Phe Lys Val Pro Glu Leu Tyr Glu Ile His Lys Glu Phe  
 545 550 555 560  
 Tyr Asp Gly Leu Phe Pro Arg Val Gln Gln Trp Ser His Gln Gln Arg  
 565 570 575  
 Val Gly Asp Leu Phe Gln Lys Leu Ala Ser Gln Leu Gly Val Tyr Arg  
 580 585 590  
 Ala Phe Val Asp Asn Tyr Gly Val Ala Met Glu Met Ala Glu Lys Cys  
 595 600 605  
 Cys Gln Ala Asn Ala Gln Phe Ala Glu Ile Ser Glu Asn Leu Arg Ala  
 610 615 620  
 Arg Ser Asn Lys Asp Ala Lys Asp Pro Thr Thr Lys Asn Ser Leu Glu  
 625 630 635 640  
 Thr Leu Leu Tyr Lys Pro Val Asp Arg Val Thr Arg Ser Thr Leu Val  
 645 650 655  
 Leu His Asp Leu Leu Lys His Thr Pro Ala Ser His Pro Asp His Pro  
 660 665 670  
 Leu Leu Gln Asp Ala Leu Arg Ile Ser Gln Asn Phe Leu Ser Ser Ile  
 675 680 685  
 Asn Glu Glu Ile Thr Pro Arg Arg Gln Ser Met Thr Val Lys Lys Gly  
 690 695 700  
 Glu His Arg Gln Leu Leu Lys Asp Ser Phe Met Val Glu Leu Val Glu  
 705 710 715 720  
 Gly Ala Arg Lys Leu Arg His Val Phe Leu Phe Thr Glu Leu Leu Leu  
 725 730 735  
 Cys Thr Lys Leu Lys Lys Gln Ser Gly Gly Lys Thr Gln Gln Tyr Asp  
 740 745 750  
 Cys Lys Trp Tyr Ile Pro Leu Thr Asp Leu Ser Phe Gln Met Val Asp  
 755 760 765  
 Glu Leu Glu Ala Val Pro Asn Ile Pro Leu Val Pro Asp Glu Glu Leu  
 770 775 780  
 Asp Ala Leu Lys Ile Lys Ile Ser Gln Ile Lys Ser Asp Ile Gln Arg  
 785 790 795 800  
 Glu Lys Arg Ala Asn Lys Gly Ser Lys Ala Thr Glu Arg Leu Lys Lys  
 805 810 815  
 Lys Leu Ser Glu Gln Glu Ser Leu Leu Leu Met Ser Pro Ser Met  
 820 825 830  
 Ala Phe Arg Val His Ser Arg Asn Gly Lys Ser Tyr Thr Phe Leu Ile  
 835 840 845  
 Ser Ser Asp Tyr Glu Arg Ala Glu Trp Arg Glu Asn Ile Arg Glu Gln  
 850 855 860  
 Gln Lys Lys Cys Phe Arg Ser Phe  
 865 870

&lt;210&gt; 141

&lt;211&gt; 691

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 141

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&lt;210&gt; 142

&lt;211&gt; 175

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 142

```

Met Asp Ile Ala Ile His His Pro Trp Ile Arg Arg Pro Phe Phe Pro
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Phe His Ser Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu His Leu
20          25          30
Leu Glu Ser Asp Leu Phe Pro Thr Ser Thr Ser Leu Ser Pro Phe Tyr
35          40          45
Leu Arg Pro Pro Ser Phe Leu Arg Ala Pro Ser Trp Phe Asp Thr Gly
50          55          60
Leu Ser Glu Met Arg Leu Glu Lys Asp Arg Phe Ser Val Asn Leu Asp
65          70          75          80
Val Lys His Phe Ser Pro Glu Glu Leu Lys Val Lys Val Leu Gly Asp
85          90          95
Val Ile Glu Val His Gly Lys His Glu Glu Arg Gln Asp Glu His Gly
100         105         110
Phe Ile Ser Arg Glu Phe His Arg Lys Tyr Arg Ile Pro Ala Asp Val
115         120         125
Asp Pro Leu Thr Ile Thr Ser Ser Leu Ser Ser Asp Gly Val Leu Thr
130         135         140
Val Asn Gly Pro Arg Lys Gln Val Ser Gly Pro Glu Arg Thr Ile Pro
145         150         155         160
Ile Thr Arg Glu Glu Lys Pro Ala Val Thr Ala Ala Pro Lys Lys
165         170         175

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&lt;210&gt; 143

&lt;211&gt; 1300

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 143

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&lt;210&gt; 144

&lt;211&gt; 233

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 144

```

Leu Leu Gly Ile Ser Trp Val Asp Ser Ser Trp Ile Pro Ile Leu Asn
 1              5              10              15
Ser Gly Ser Val Leu Asp Tyr Phe Ser Glu Arg Ser Asn Pro Phe Tyr
              20              25              30
Asp Arg Thr Cys Asn Asn Glu Val Val Lys Met Gln Arg Leu Thr Leu
              35              40              45
Glu His Leu Asn Gln Met Val Gly Ile Glu Tyr Ile Leu Leu His Ala
              50              55              60
Gln Glu Pro Ile Leu Phe Ile Ile Arg Lys Gln Gln Arg Gln Ser Pro
65              70              75              80
Ala Gln Val Ile Pro Leu Ala Asp Tyr Tyr Ile Ile Ala Gly Val Ile
              85              90              95
Tyr Gln Ala Pro Asp Leu Gly Ser Val Ile Asn Ser Arg Val Leu Thr
              100             105             110
Ala Val His Gly Ile Gln Ser Ala Phe Asp Glu Ala Met Ser Tyr Cys
              115             120             125
Arg Tyr His Pro Ser Lys Gly Tyr Trp Trp His Phe Lys Asp His Glu
              130             135             140
Glu Gln Asp Lys Val Arg Pro Lys Ala Lys Arg Lys Glu Glu Pro Ser
145             150             155             160
Ser Ile Phe Gln Arg Gln Arg Val Asp Ala Leu Leu Leu Asp Leu Arg
              165             170             175
Gln Lys Phe Pro Pro Lys Phe Val Gln Leu Lys Pro Gly Glu Lys Pro
              180             185             190
Val Gln Val Asp Gln Thr Lys Lys Glu Ala Glu Pro Ile Pro Glu Thr
              195             200             205
Val Lys Pro Glu Glu Lys Glu Thr Pro Glu Cys Thr Thr Arg Pro Gly
              210             215             220
Val Leu Lys Ala Pro Leu Lys Asn Gly
225              230

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&lt;210&gt; 145

&lt;211&gt; 1528

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 145

```

ccccctttt tttttaaact aaaatggagg ctggtttctt gccttaagga gccattgcc      60
tttcccgtcg aagtctagat gttgacatgt aataaagcgg gcagcaggat ggtggtggat     120
gcggccaaact ccaatggggc tttccagccc gtggtccttc tccatattcg agatgttcct     180
cctgctgatac aagagaagct ttttatccag aagttacgtc agtggtgcgt cctctttgac     240
tttgtttctg atccactaag tgacctaaag tgggaaggaag taaaacgagc tgctttaagt     300
gaaatggtag aatatatcac ccataatcgg aatgtgatac cagagcctat ttaccagaa      360
gtagtccata tgtttgcagt taacatgttt cgaacattac caccttcctc caatcctacg     420
ggagcgggaat ttgaccggga ggaagatgaa ccaacgttag aagcagcctg gcctcatcta     480
cagcttgttt atgaattttt cttaagattt ttagagtctc cagatttcca acctaatata     540
gcgaagaaat atattgatca gaagtttgta ttgcagcttt tagagctctt tgacagttaa     600
gatcctcggg agagagattt tcttaaaacc acccttcaca gaatctatgg gaaattccta     660
ggcttgagag cttacatcag aaaacagata aataatatat tttatagggt tatttatgaa     720
acagagcatc ataatggcat agcagagtta ctggaaatat tgggaagtat aattaatgga     780
tttgctttac cactaaaaga agagcacaag attttcttat tgaagggtgt actacctttg     840
caciaagtga aatctctgag tgtctaccat cccagctggg catactgtgt agtgcagttt     900
ttagaaaagg acagcacctt caggaacca gtggtgatgg cacttctcaa atactggcca     960
aagactcaca gtccaaaaga agtaatgttc ttaaacgaat tagaagagat tttagatgtc    1020
attgaacctt cagaatttgt gaagatcatg gaacccctct tccggcagtt ggccaaatgt    1080
gtctccagcc cacacttcca ggtggcagag cgagctctct attactggaa taatgaatac    1140
atcatgagtt taatcagtga caacgcagcg aagattcttc ccatcatgtt tcttctcttg    1200
taccgcaact caaagacca ttggaacaag acaatacatg gcttgatata caacgccttg    1260
aagctcttca tggagatgaa ccaaagcta tttgatgact gtacacaaca gttcaaagca    1320
gagaaactaa aagagaagct aaaaatgaaa gaacgggaag aagcatgggt taaaatagaa    1380
aatctagcca aagccaatcc ccaggtacta aaaaagagaa taacatgaaa aggccagggg    1440
ttacttgaat gtttttataa gataggaata tatgtcttca ccatgggggg ggtctcgatt    1500
tcactaacgt tgtatatgaa aatgtctg                                     1528

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&lt;210&gt; 146

&lt;211&gt; 449

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 146

```

Met Leu Thr Cys Asn Lys Ala Gly Ser Arg Met Val Val Asp Ala Ala
 1          5          10          15
Asn Ser Asn Gly Pro Phe Gln Pro Val Val Leu Leu His Ile Arg Asp
          20          25          30
Val Pro Pro Ala Asp Gln Glu Lys Leu Phe Ile Gln Lys Leu Arg Gln
          35          40          45
Cys Cys Val Leu Phe Asp Phe Val Ser Asp Pro Leu Ser Asp Leu Lys
          50          55          60
Trp Lys Glu Val Lys Arg Ala Ala Leu Ser Glu Met Val Glu Tyr Ile
          65          70          75          80
Thr His Asn Arg Asn Val Ile Thr Glu Pro Ile Tyr Pro Glu Val Val
          85          90          95
His Met Phe Ala Val Asn Met Phe Arg Thr Leu Pro Pro Ser Ser Asn
          100          105          110
Pro Thr Gly Ala Glu Phe Asp Pro Glu Glu Asp Glu Pro Thr Leu Glu
          115          120          125
Ala Ala Trp Pro His Leu Gln Leu Val Tyr Glu Phe Phe Leu Arg Phe
          130          135          140

```

Leu Glu Ser Pro Asp Phe Gln Pro Asn Ile Ala Lys Lys Tyr Ile Asp  
 145 150 155 160  
 Gln Lys Phe Val Leu Gln Leu Leu Glu Leu Phe Asp Ser Glu Asp Pro  
 165 170 175  
 Arg Glu Arg Asp Phe Leu Lys Thr Thr Leu His Arg Ile Tyr Gly Lys  
 180 185 190  
 Phe Leu Gly Leu Arg Ala Tyr Ile Arg Lys Gln Ile Asn Asn Ile Phe  
 195 200 205  
 Tyr Arg Phe Ile Tyr Glu Thr Glu His His Asn Gly Ile Ala Glu Leu  
 210 215 220  
 Leu Glu Ile Leu Gly Ser Ile Ile Asn Gly Phe Ala Leu Pro Leu Lys  
 225 230 235 240  
 Glu Glu His Lys Ile Phe Leu Leu Lys Val Leu Leu Pro Leu His Lys  
 245 250 255  
 Val Lys Ser Leu Ser Val Tyr His Pro Gln Leu Ala Tyr Cys Val Val  
 260 265 270  
 Gln Phe Leu Glu Lys Asp Ser Thr Leu Thr Glu Pro Val Val Met Ala  
 275 280 285  
 Leu Leu Lys Tyr Trp Pro Lys Thr His Ser Pro Lys Glu Val Met Phe  
 290 295 300  
 Leu Asn Glu Leu Glu Glu Ile Leu Asp Val Ile Glu Pro Ser Glu Phe  
 305 310 315 320  
 Val Lys Ile Met Glu Pro Leu Phe Arg Gln Leu Ala Lys Cys Val Ser  
 325 330 335  
 Ser Pro His Phe Gln Val Ala Glu Arg Ala Leu Tyr Tyr Trp Asn Asn  
 340 345 350  
 Glu Tyr Ile Met Ser Leu Ile Ser Asp Asn Ala Ala Lys Ile Leu Pro  
 355 360 365  
 Ile Met Phe Pro Ser Leu Tyr Arg Asn Ser Lys Thr His Trp Asn Lys  
 370 375 380  
 Thr Ile His Gly Leu Ile Tyr Asn Ala Leu Lys Leu Phe Met Glu Met  
 385 390 395 400  
 Asn Gln Lys Leu Phe Asp Asp Cys Thr Gln Gln Phe Lys Ala Glu Lys  
 405 410 415  
 Leu Lys Glu Lys Leu Lys Met Lys Glu Arg Glu Glu Ala Trp Val Lys  
 420 425 430  
 Ile Glu Asn Leu Ala Lys Ala Asn Pro Gln Val Leu Lys Lys Arg Ile  
 435 440 445  
 Thr

&lt;210&gt; 147

&lt;211&gt; 1580

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 147

atccccctccg gtttttccctca gtctccacgt acgtccctca aagcgcgtcc taaaaccggg	60
ataaccggag cgctcccat ggaccacag gaggggttgc ccgcggagga gccgctgcg	120
catgtccat cgctgggaa atttggtgag cggcctccac ctaaaccgact tactagggaa	180
gctatgcgaa attattttaa agagcgagg gatcaaacag tacttattct tcatgcaaaa	240
gttgacaga agtcatatgg aaatgaaaaa aggttttttt gccacctcc ttgtgtatat	300
cttatgggca gcggatggaa gaaaaaaaaa gaacaaatgg aacgcgatgg ttgttctgaa	360
caagagtctc aaccgtgtgc atttattggg ataggaaata gtgaccaaga aatgcagcag	420
ctaaacttgg aaggaaagaa ctattgcaca gccaaaaaat tgtatatatc tgactcagac	480



```

aagcgaaagc acttcatttt ttctgtaaag atgtttctatg gcaacagtga tgacattggt      540
gtgttcctca gcaagcggat aaaagtcatc tccaaacctt ccaaaaagaa gcagtcattg      600
aaaaatgctg acttatgcat tgcctcagga acaaagggtg ctctgtttta tgcactacga      660
tcccagacag ttagtaccag atacttgcac gtagaaggag gtaattttca tgccagttca      720
cagcagtggg gagccttttt tattcatctc ttggatgatg atgaatcaga aggagaagaa      780
ttcacagtcc gagatgtcta catccattat ggacaaacat gcaaacttgt gtgctcagtt      840
actggcatgg cactcccaag attgataatt atgaaagttg ataagcatac cgcattattg      900
gatgcagatg atcctgtgtc acaactccat aaatgtgcat tttaccttaa ggatacagaa      960
agaatgtatt tgtgcctttc tcaagaaaga ataattcaat ttcaggccac tccatgtcca     1020
aaagaaccaa ataaagagat gataaatgat ggcgcttccg ggacaatcat tagcacagat     1080
aaggcagagt atacatttta tgagggaatg ggccctgtcc ttgccccagt cactcctgtg     1140
cctgtggtag agagccttca gttgaatggc ggtggggacg tagcaatgct tgaacttaca     1200
ggacagaatt tcaactccaa tttacgagtg tggtttgggg atgtagaagc tgaaactatg     1260
tacaggtgtg gagagagtat gctctgtgtc gtcccagaca tttctgcatt ccgagaaggt     1320
tggagatggg tccggcaacc agtccaggtt ccagtaactt tgggtccgaa tgatggaatc     1380
atttattcca ccagccttac ctttacctac acaccagaac cagggccacg gccacattgc     1440
agtgtagcag gagcaatcct tccagccaat tcaagccagg tgccccctaa cgaatcaaac     1500
acaaacagcg agggaaagtt cacaaacgcc agcacaaatt caaccagtgt cacatcatct     1560
acagccacag tggtatccta                                     1580

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&lt;210&gt; 148

&lt;211&gt; 500

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 148

```

Met Asp His Thr Glu Gly Leu Pro Ala Glu Glu Pro Pro Ala His Ala
 1          5          10          15
Pro Ser Pro Gly Lys Phe Gly Glu Arg Pro Pro Pro Lys Arg Leu Thr
          20          25          30
Arg Glu Ala Met Arg Asn Tyr Leu Lys Glu Arg Gly Asp Gln Thr Val
          35          40          45
Leu Ile Leu His Ala Lys Val Ala Gln Lys Ser Tyr Gly Asn Glu Lys
          50          55          60
Arg Phe Phe Cys Pro Pro Pro Cys Val Tyr Leu Met Gly Ser Gly Trp
65          70          75          80
Lys Lys Lys Lys Glu Gln Met Glu Arg Asp Gly Cys Ser Glu Gln Glu
          85          90          95
Ser Gln Pro Cys Ala Phe Ile Gly Ile Gly Asn Ser Asp Gln Glu Met
          100          105          110
Gln Gln Leu Asn Leu Glu Gly Lys Asn Tyr Cys Thr Ala Lys Thr Leu
          115          120          125
Tyr Ile Ser Asp Ser Asp Lys Arg Lys His Phe Ile Phe Ser Val Lys
          130          135          140
Met Phe Tyr Gly Asn Ser Asp Asp Ile Gly Val Phe Leu Ser Lys Arg
          145          150          155          160
Ile Lys Val Ile Ser Lys Pro Ser Lys Lys Lys Gln Ser Leu Lys Asn
          165          170          175
Ala Asp Leu Cys Ile Ala Ser Gly Thr Lys Val Ala Leu Phe Asn Arg
          180          185          190
Leu Arg Ser Gln Thr Val Ser Thr Arg Tyr Leu His Val Glu Gly Gly
          195          200          205
Asn Phe His Ala Ser Ser Gln Gln Trp Gly Ala Phe Phe Ile His Leu
          210          215          220
Leu Asp Asp Asp Glu Ser Glu Gly Glu Glu Phe Thr Val Arg Asp Val

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```
<210> 149
<211> 1248
<212> DNA
<213> Homo Sapiens
```

-111-

```

aatcggattg agaagaacat cctgagctca gcggaactacg tggaacgtgg gcaggagcac      840
gtcaagacgg ccttgagaa ccagaagaag gtgaggaaga agaaagtctt gattgccatc      900
tgtgtgtcca tcaccgtcgt cctcctagca gtcattcattg gcgtcacagt ggttggataa      960
tgtcgacat  tgttggcact aggagcacca ggaaccagg  gcctggcctt ctctcccagc     1020
agcctggggg gcaggcagag cctccagtcg gacccttcc  tcacacactg gcccctatgc     1080
agaagggcag acagttcttc tgggggttggc agctgctcat tcatgatggc ctctccttc     1140
aggcctcaat gcctggggga ggctgcact gtcctgattg gccgggacac acggttttgt     1200
aaaaaattaa aaaacaaaaa aagagcatag aaaaaaaaaa aaccgagt      1248

```

&lt;210&gt; 150

&lt;211&gt; 297

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 150

```

Met Arg Asp Arg Thr His Glu Leu Arg Gln Gly Asp Asp Ser Ser Asp
 1           5           10           15
Glu Glu Asp Lys Glu Arg Val Ala Leu Val Val His Pro Gly Thr Ala
 20           25           30
Arg Leu Gly Ser Pro Asp Glu Glu Phe Phe His Lys Val Arg Thr Ile
 35           40           45
Arg Gln Thr Ile Val Lys Leu Gly Asn Lys Val Gln Glu Leu Glu Lys
 50           55           60
Gln Gln Val Thr Ile Leu Ala Thr Pro Leu Pro Glu Glu Ser Met Lys
 65           70           75           80
Gln Glu Leu Gln Asn Leu Arg Asp Glu Ile Lys Gln Leu Gly Arg Glu
 85           90           95
Ile Arg Leu Gln Leu Lys Ala Ile Glu Pro Gln Lys Glu Glu Ala Asp
 100          105          110
Glu Asn Tyr Asn Ser Val Asn Thr Arg Met Arg Lys Thr Gln His Gly
 115          120          125
Val Leu Ser Gln Gln Phe Val Glu Leu Ile Asn Lys Cys Asn Ser Met
 130          135          140
Gln Ser Glu Tyr Arg Glu Lys Asn Val Glu Arg Ile Arg Arg Gln Leu
 145          150          155          160
Lys Ile Thr Asn Ala Gly Met Val Ser Asp Glu Glu Leu Asp Gln Met
 165          170          175
Leu Asp Ser Gly Gln Ser Glu Val Phe Val Ser Asn Ile Leu Lys Asp
 180          185          190
Thr Gln Val Thr Arg Gln Ala Leu Asn Glu Ile Ser Ala Arg His Ser
 195          200          205
Glu Ile Gln Gln Leu Glu Arg Ser Ile Arg Glu Leu His Asp Ile Phe
 210          215          220
Thr Phe Leu Ala Thr Glu Val Glu Met Gln Gly Glu Met Ile Asn Arg
 225          230          235          240
Ile Glu Lys Asn Ile Leu Ser Ser Ala Asp Tyr Val Glu Arg Gly Gln
 245          250          255
Glu His Val Lys Thr Ala Leu Glu Asn Gln Lys Lys Val Arg Lys Lys
 260          265          270
Lys Val Leu Ile Ala Ile Cys Val Ser Ile Thr Val Val Leu Leu Ala
 275          280          285
Val Ile Ile Gly Val Thr Val Val Gly
 290          295

```

&lt;210&gt; 151

<211> 1953  
 <212> DNA  
 <213> Homo Sapiens

<400> 151

```

acgcctgcc  ggagcaagcc  gaagagccag  ccggccggcg  cactccgact  ccgagcagtc      60
tctgtccttc  gacccgagcc  ccgcgccttt  tccgggaccc  ctgccccgcg  ggcagcgctg     120
ccaacctgcc  ggccatggag  accccgtccc  agcggcgcg  caccgcagc  ggggcgagg      180
ccagctccac  tccgtgtcg  cccacccgca  tcaccgggt  gcaggagaag  gaggacctgc     240
aggagctcaa  tgatcgcttg  gcggtctaca  tcgaccgtgt  gcgctcgctg  gaaacggaga     300
acgcagggct  gcgccttcgc  atcaccgagt  ctgaagaggt  ggtcagccgc  gaggtgtccg     360
gcatcaaggc  cgctacgag  gccgagctcg  gggatgccc  caagaccctt  gactcagtag     420
ccaaggagcg  cgcccgctg  cagctggagc  tgagcaaagt  gcgtgaggag  tttaggagc      480
tgaaagcgcg  caataccaag  aaggagggtg  acctgatagc  tgctcaggct  cggctgaagg     540
acctggaggc  tctgtgaac  tccaaggagg  ccgcaactgag  cactgctctc  agtgagaagc     600
gcacgctgga  gggcgagctg  catgatctgc  ggggccaggt  ggccaagctt  gaggcagccc     660
taggtgaggc  caagaagcaa  cttcaggatg  agatgctgcg  gcgggtggat  gctgagaaca     720
ggctgcagac  catgaaggag  gaactggact  tccagaagaa  catctacagt  gaggagctgc     780
gtgagaccaa  gcgcctcat  gagaccgac  tgggtggagt  tgacaatggg  aagcagcgctg    840
agtttgagag  ccggctggcg  gatgcgctgc  aggaactgcg  ggcccagcat  gaggaccagg     900
tggagcagta  taagaaggag  ctggagaaga  cttattctgc  caagctggac  aatgccaggc     960
agtctgctga  gaggaacagc  aacctggtgg  gggctgcccc  cgaggagctg  cagcagtcgc    1020
gcatccgcac  cgacagctc  tctgcccagc  tcagccagct  ccagaagcag  ctggcagcca    1080
aggaggcgaa  gcttcgagac  ctggaggact  cactggcccg  tgagcgggac  accagccggc    1140
ggctgctggc  ggaaaaggag  cgggagatgg  ccgagatgcg  ggcaaggatg  cagcagcagc    1200
tggacagta  ccaggagctt  ctggacatca  agctggccct  ggacatggag  atccacgcct    1260
accgcaagct  cttggagggc  gaggaggaga  ggctacgcct  gtccccccagc  cctacctcgc    1320
agcgagccg  tggcctgct  tcctctcact  catccagac  acagggtggg  ggcagcgctca   1380
ccaaaaagcg  caaactggag  tccactgaga  gccgcagcag  cttctcacag  cacgcacgca    1440
ctagcgggcg  cgtggccgtg  gaggaggtgg  atgaggaggg  caagtttgtc  cggtgcgca     1500
acaagtccaa  tgaggaccag  tccatgggca  attggcagat  caagcgccag  aatggagatg    1560
atcccttgct  gacttacggg  tccccaccaa  agttcaccct  gaaggctggg  caggtggtga    1620
cgatctgggc  tgcaggagct  ggggccaccc  acagccccc  taccgacctg  gtgtggaagg    1680
cacagaacac  ctggggctgc  gggaacagcc  tgcgtacggc  tctcatcaac  tccactgggg    1740
aagaagtggc  catgcgcaag  ctggtgcgct  cagtgactgt  ggttgaggac  gacgaggatg    1800
aggatggaga  tgacctgctc  catcaccacc  acgtgagtgg  tagccgcgc  tgaggccgag    1860
cctgcactgg  ggccaccagc  caggcctggg  ggcagcctct  ccccagcctc  cccgtgccaa    1920
aaatcttttc  attaaagaat  gttttggaac  ttt                                     1953

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<210> 152  
 <211> 572  
 <212> PRT  
 <213> Homo Sapiens

<400> 152

```

Met Glu Thr Pro Ser Gln Arg Arg Ala Thr Arg Ser Gly Ala Gln Ala
 1              5              10              15
Ser Ser Thr Pro Leu Ser Pro Thr Arg Ile Thr Arg Leu Gln Glu Lys
      20              25              30
Glu Asp Leu Gln Glu Leu Asn Asp Arg Leu Ala Val Tyr Ile Asp Arg
      35              40              45
Val Arg Ser Leu Glu Thr Glu Asn Ala Gly Leu Arg Leu Arg Ile Thr
      50              55              60
Glu Ser Glu Glu Val Val Ser Arg Glu Val Ser Gly Ile Lys Ala Ala
65              70              75              80

```

Tyr Glu Ala Glu Leu Gly Asp Ala Arg Lys Thr Leu Asp Ser Val Ala  
 85 90 95  
 Lys Glu Arg Ala Arg Leu Gln Leu Glu Ser Lys Val Arg Glu Glu  
 100 105 110  
 Phe Lys Glu Leu Lys Ala Arg Asn Thr Lys Lys Glu Gly Asp Leu Ile  
 115 120 125  
 Ala Ala Gln Ala Arg Leu Lys Asp Leu Glu Ala Leu Leu Asn Ser Lys  
 130 135 140  
 Glu Ala Ala Leu Ser Thr Ala Leu Ser Glu Lys Arg Thr Leu Glu Gly  
 145 150 155 160  
 Glu Leu His Asp Leu Arg Gly Gln Val Ala Lys Leu Glu Ala Ala Leu  
 165 170 175  
 Gly Glu Ala Lys Lys Gln Leu Gln Asp Glu Met Leu Arg Arg Val Asp  
 180 185 190  
 Ala Glu Asn Arg Leu Gln Thr Met Lys Glu Glu Leu Asp Phe Gln Lys  
 195 200 205  
 Asn Ile Tyr Ser Glu Glu Leu Arg Glu Thr Lys Arg Arg His Glu Thr  
 210 215 220  
 Arg Leu Val Glu Ile Asp Asn Gly Lys Gln Arg Glu Phe Glu Ser Arg  
 225 230 235 240  
 Leu Ala Asp Ala Leu Gln Glu Leu Arg Ala Gln His Glu Asp Gln Val  
 245 250 255  
 Glu Gln Tyr Lys Lys Glu Leu Glu Lys Thr Tyr Ser Ala Lys Leu Asp  
 260 265 270  
 Asn Ala Arg Gln Ser Ala Glu Arg Asn Ser Asn Leu Val Gly Ala Ala  
 275 280 285  
 His Glu Glu Leu Gln Gln Ser Arg Ile Arg Ile Asp Ser Leu Ser Ala  
 290 295 300  
 Gln Leu Ser Gln Leu Gln Lys Gln Leu Ala Ala Lys Glu Ala Lys Leu  
 305 310 315 320  
 Arg Asp Leu Glu Asp Ser Leu Ala Arg Glu Arg Asp Thr Ser Arg Arg  
 325 330 335  
 Leu Leu Ala Glu Lys Glu Arg Glu Met Ala Glu Met Arg Ala Arg Met  
 340 345 350  
 Gln Gln Gln Leu Asp Glu Tyr Gln Glu Leu Leu Asp Ile Lys Leu Ala  
 355 360 365  
 Leu Asp Met Glu Ile His Ala Tyr Arg Lys Leu Leu Glu Gly Glu Glu  
 370 375 380  
 Glu Arg Leu Arg Leu Ser Pro Ser Pro Thr Ser Gln Arg Ser Arg Gly  
 385 390 395 400  
 Arg Ala Ser Ser His Ser Ser Gln Thr Gln Gly Gly Gly Ser Val Thr  
 405 410 415  
 Lys Lys Arg Lys Leu Glu Ser Thr Glu Ser Arg Ser Ser Phe Ser Gln  
 420 425 430  
 His Ala Arg Thr Ser Gly Arg Val Ala Val Glu Glu Val Asp Glu Glu  
 435 440 445  
 Gly Lys Phe Val Arg Leu Arg Asn Lys Ser Asn Glu Asp Gln Ser Met  
 450 455 460  
 Gly Asn Trp Gln Ile Lys Arg Gln Asn Gly Asp Asp Pro Leu Leu Thr  
 465 470 475 480  
 Tyr Arg Phe Pro Pro Lys Phe Thr Leu Lys Ala Gly Gln Val Val Thr  
 485 490 495  
 Ile Trp Ala Ala Gly Ala Gly Ala Thr His Ser Pro Pro Thr Asp Leu  
 500 505 510  
 Val Trp Lys Ala Gln Asn Thr Trp Gly Cys Gly Asn Ser Leu Arg Thr

<400> 154															
Met	Asp	Pro	Arg	Lys	Val	Asn	Glu	Leu	Arg	Ala	Phe	Val	Lys	Met	Cys
1				5					10					15	
Lys	Gln	Asp	Pro	Ser	Val	Leu	Tyr	Thr	Glu	Glu	Met	Arg	Phe	Leu	Arg
			20					25					30		
Glu	Trp	Val	Glu	Ser	Ile	Gly	Gly	Lys	Val	Pro	Pro	Ala	Thr	Gln	Lys
		35					40					45			
Ala	Ile	Ser	Glu	Glu	Asn	Thr	Lys	Glu	Glu	Lys	Pro	Asp	Ser	Lys	Lys

50	55	60
Val Glu Glu Asp Leu Lys Ala Asp Glu Pro Ser Ser Glu Glu Ser Asp		
65	70	75
Leu Glu Ile Asp Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro		80
	85	90
Gln Glu Met Gly Asp Glu Asn Ala Glu Ile Thr Glu Glu Met Met Asp		95
	100	105
Gln Ala Asn Asp Lys Lys Val Ala Ala Ile Glu Ala Leu Asn Asp Gly		110
	115	120
Glu Leu Gln Lys Ala Ile Asp Leu Phe Thr Asp Ala Ile Lys Leu Asn		125
	130	135
Pro Arg Leu Ala Ile Leu Tyr Ala Lys Arg Ala Ser Val Phe Val Lys		140
145	150	155
Leu Gln Lys Pro Asn Ala Ala Ile Arg Asp Cys Asp Arg Ala Ile Glu		160
	165	170
Ile Asn Pro Asp Ser Ala Gln Pro Tyr Lys Trp Arg Gly Lys Ala His		175
	180	185
Arg Leu Leu Gly His Trp Glu Glu Ala Ala His Asp Leu Ala Leu Ala		190
	195	200
Cys Lys Leu Asp Tyr Asp Glu Asp Ala Ser Ala Met Leu Lys Glu Val		205
	210	215
Gln Pro Arg Ala Gln Lys Ile Ala Glu His Arg Arg Lys Tyr Glu Arg		220
225	230	235
Lys Arg Glu Glu Arg Glu Ile Lys Glu Arg Ile Glu Arg Val Lys Lys		240
	245	250
Ala Arg Glu Glu His Glu Arg Ala Gln Arg Glu Glu Glu Ala Arg Arg		255
	260	265
Gln Ser Gly Ala Gln Tyr Gly Ser Phe Pro Gly Gly Phe Pro Gly Gly		270
	275	280
Met Pro Gly Asn Phe Pro Gly Gly Met Pro Gly Met Gly Gly Gly Met		285
	290	295
Pro Gly Met Ala Gly Met Pro Gly Leu Asn Glu Ile Leu Ser Asp Pro		300
305	310	315
Glu Val Leu Ala Ala Met Gln Asp Pro Glu Val Met Val Ala Phe Gln		320
	325	330
Asp Val Ala Gln Asn Pro Ala Asn Met Ser Lys Tyr Gln Ser Asn Pro		335
	340	345
Lys Val Met Asn Leu Ile Ser Lys Leu Ser Ala Lys Phe Gly Gly Gln		350
	355	360
Ala		365

<210> 155  
 <211> 1323  
 <212> DNA  
 <213> Homo Sapiens

<400> 155	
cacaaaggca ccaaaccaca aaacgtcaca cgtaaaccatc atacgtggca accacaagcc	60
aatcagttgg atatttcatt cattggtata catatggact gtaaggtgtc tttcaggttg	120
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cagtaaagaa agaaatccag agaggaagga agttgaaatg caaattttgt cataaaagag	360
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agaaggacga cgcagttcca cagtctgatg gagttcgagg aatttataaa ctgctttgcc 480
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aaagaggaag gaagaaaccc ctctcaggca atcatgtaca gccacccgaa acaatgaaat 600
gtaatacatt cataagacaa gtgaaagaag agcatggcag acacacagat gcaactgtga 660
aagttccttt tcttaagaaa tgcaagggaa gcaggacttc ttaattactt acttgaagaa 720
atattagnca aagttcattc aattccagaa aaactcatgg atgagactta cttcagaatc 780
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gaaggaagag attgagctac ttcaggactt aaaacaaacc ttgtgctctt ttcaagaaaa 960
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aaa 1323

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&lt;210&gt; 156

&lt;211&gt; 191

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 156

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1      5      10      15
Val Leu Tyr Phe Ala Gln Ser Glu Asn Ile Ala Ala His Glu Asn Cys
20     25     30
Leu Leu Tyr Ser Ser Gly Leu Val Glu Cys Glu Asp Gln Asp Pro Leu
35     40     45
Asn Pro Asp Arg Ser Phe Asp Val Glu Ser Val Lys Lys Glu Ile Gln
50     55     60
Arg Gly Arg Lys Leu Lys Cys Lys Phe Cys His Lys Arg Gly Ala Thr
65     70     75     80
Val Gly Cys Asp Leu Lys Asn Cys Asn Lys Asn Tyr His Phe Phe Cys
85     90     95
Ala Lys Lys Asp Asp Ala Val Pro Gln Ser Asp Gly Val Arg Gly Ile
100    105    110
Tyr Lys Leu Leu Cys Gln Gln His Ala Gln Phe Pro Ile Ile Ala Gln
115    120    125
Ser Ala Lys Phe Ser Gly Val Lys Arg Lys Arg Gly Arg Lys Lys Pro
130    135    140
Leu Ser Gly Asn His Val Gln Pro Pro Glu Thr Met Lys Cys Asn Thr
145    150    155    160
Phe Ile Arg Gln Val Lys Glu Glu His Gly Arg His Thr Asp Ala Thr
165    170    175
Val Lys Val Pro Phe Leu Lys Lys Cys Lys Gly Ser Arg Thr Ser
180    185    190

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&lt;210&gt; 157

&lt;211&gt; 4065

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 157

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tctttccgga aagtgggtcaa aaatacatct ggaaaaacta gttaa 4065

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&lt;210&gt; 158

&lt;211&gt; 1354

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 158

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Met Ser Thr Gly Asp Ser Phe Glu Thr Arg Phe Glu Lys Met Asp Asn
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Leu Leu Arg Asp Pro Lys Ser Glu Val Asn Ser Asp Cys Leu Leu Asp
      20          25          30
Gly Leu Asp Ala Leu Val Tyr Asp Leu Asp Phe Pro Ala Leu Arg Lys
      35          40          45
Asn Lys Asn Ile Asp Asn Phe Leu Ser Arg Tyr Lys Asp Thr Ile Asn
      50          55          60
Lys Ile Arg Asp Leu Arg Met Lys Ala Glu Asp Tyr Glu Val Val Lys
      65          70          75          80
Val Ile Gly Arg Gly Ala Phe Gly Glu Val Gln Leu Val Arg His Lys
      85          90          95
Ser Thr Arg Lys Val Tyr Ala Met Lys Leu Leu Ser Lys Phe Glu Met
      100          105          110
Ile Lys Arg Ser Asp Ser Ala Phe Phe Trp Glu Glu Arg Asp Ile Met
      115          120          125
Ala Phe Ala Asn Ser Pro Trp Val Val Gln Leu Phe Tyr Ala Phe Gln
      130          135          140
Asp Asp Arg Tyr Leu Tyr Met Val Met Glu Tyr Met Pro Gly Gly Asp
      145          150          155          160
Leu Val Asn Leu Met Ser Asn Tyr Asp Val Pro Glu Lys Trp Ala Arg
      165          170          175
Phe Tyr Thr Ala Glu Val Val Leu Ala Leu Asp Ala Ile His Ser Met
      180          185          190
Gly Phe Ile His Arg Asp Val Lys Pro Asp Asn Met Leu Leu Asp Lys
      195          200          205
Ser Gly His Leu Lys Leu Ala Asp Phe Gly Thr Cys Met Lys Met Asn
      210          215          220
Lys Glu Gly Met Val Arg Cys Asp Thr Ala Val Gly Thr Pro Asp Tyr
      225          230          235          240
Ile Ser Pro Glu Val Leu Lys Ser Gln Gly Gly Asp Gly Tyr Tyr Gly
      245          250          255
Arg Glu Cys Asp Trp Trp Ser Val Gly Val Phe Leu Tyr Glu Met Leu
      260          265          270
Val Gly Asp Thr Pro Phe Tyr Ala Asp Ser Leu Val Gly Thr Tyr Ser
      275          280          285

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Lys Ile Met Asn His Lys Asn Ser Leu Thr Phe Pro Asp Asp Asn Asp  
 290 295 300  
 Ile Ser Lys Glu Ala Lys Asn Leu Ile Cys Ala Phe Leu Thr Asp Arg  
 305 310 315 320  
 Glu Val Arg Leu Gly Arg Asn Gly Val Glu Glu Ile Lys Arg His Leu  
 325 330 335  
 Phe Phe Lys Asn Asp Gln Trp Ala Trp Glu Thr Leu Arg Asp Thr Val  
 340 345 350  
 Ala Pro Val Val Pro Asp Leu Ser Ser Asp Ile Asp Thr Ser Asn Phe  
 355 360 365  
 Asp Asp Leu Glu Glu Asp Lys Gly Glu Glu Glu Thr Phe Pro Ile Pro  
 370 375 380  
 Lys Ala Phe Val Gly Asn Gln Leu Pro Phe Val Gly Phe Thr Tyr Tyr  
 385 390 395 400  
 Ser Asn Arg Arg Tyr Leu Ser Ser Ala Asn Pro Asn Asp Asn Arg Thr  
 405 410 415  
 Ser Ser Asn Ala Asp Lys Ser Leu Gln Glu Ser Leu Gln Lys Thr Ile  
 420 425 430  
 Tyr Lys Leu Glu Glu Gln Leu His Asn Glu Met Gln Leu Lys Asp Glu  
 435 440 445  
 Met Glu Gln Lys Cys Arg Thr Ser Asn Ile Lys Leu Asp Lys Ile Met  
 450 455 460  
 Lys Glu Leu Asp Glu Glu Gly Asn Gln Arg Arg Asn Leu Glu Ser Thr  
 465 470 475 480  
 Val Ser Gln Ile Glu Lys Glu Lys Met Leu Leu Gln His Arg Ile Asn  
 485 490 495  
 Glu Tyr Gln Arg Lys Ala Glu Gln Glu Asn Glu Lys Arg Arg Asn Val  
 500 505 510  
 Glu Asn Glu Val Ser Thr Leu Lys Asp Gln Leu Glu Asp Leu Lys Lys  
 515 520 525  
 Val Ser Gln Asn Ser Gln Leu Ala Asn Glu Lys Leu Ser Gln Leu Gln  
 530 535 540  
 Lys Gln Leu Glu Glu Ala Asn Asp Leu Leu Arg Thr Glu Ser Asp Thr  
 545 550 555 560  
 Ala Val Arg Leu Arg Lys Ser His Thr Glu Met Ser Lys Ser Ile Ser  
 565 570 575  
 Gln Leu Glu Ser Leu Asn Arg Glu Leu Gln Glu Arg Asn Arg Ile Leu  
 580 585 590  
 Glu Asn Ser Lys Ser Gln Thr Asp Lys Asp Tyr Tyr Gln Leu Gln Ala  
 595 600 605  
 Ile Leu Glu Ala Glu Arg Arg Asp Arg Gly His Asp Ser Glu Met Ile  
 610 615 620  
 Gly Asp Leu Gln Ala Arg Ile Thr Ser Leu Gln Glu Glu Val Lys His  
 625 630 635 640  
 Leu Lys His Asn Leu Glu Lys Val Glu Gly Glu Arg Lys Glu Ala Gln  
 645 650 655  
 Asp Met Leu Asn His Ser Glu Lys Glu Lys Asn Asn Leu Glu Ile Asp  
 660 665 670  
 Leu Asn Tyr Lys Leu Lys Ser Leu Gln Gln Arg Leu Glu Gln Glu Val  
 675 680 685  
 Asn Glu His Lys Val Thr Lys Ala Arg Leu Thr Asp Lys His Gln Ser  
 690 695 700  
 Ile Glu Glu Ala Lys Ser Val Ala Met Cys Glu Met Glu Lys Lys Leu  
 705 710 715 720  
 Lys Glu Glu Arg Glu Ala Arg Glu Lys Ala Glu Asn Arg Val Val Gln

				725						730					735				
Ile	Glu	Lys	Gln	Cys	Ser	Met	Leu	Asp	Val	Asp	Leu	Lys	Gln	Ser	Gln				
				740						745					750				
Gln	Lys	Leu	Glu	His	Leu	Thr	Gly	Asn	Lys	Glu	Arg	Met	Glu	Asp	Glu				
				755						760					765				
Val	Lys	Asn	Leu	Thr	Leu	Gln	Leu	Glu	Gln	Glu	Ser	Asn	Lys	Arg	Leu				
				770						775					780				
Leu	Leu	Gln	Asn	Glu	Leu	Lys	Thr	Gln	Ala	Phe	Glu	Ala	Asp	Asn	Leu				
				785						790					795				800
Lys	Gly	Leu	Glu	Lys	Gln	Met	Lys	Gln	Glu	Ile	Asn	Thr	Leu	Leu	Glu				
				805						810					815				
Ala	Lys	Arg	Leu	Leu	Glu	Phe	Glu	Leu	Ala	Gln	Leu	Thr	Lys	Gln	Tyr				
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Arg	Gly	Asn	Glu	Gly	Gln	Met	Arg	Glu	Leu	Gln	Asp	Gln	Leu	Glu	Ala				
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Glu	Gln	Tyr	Phe	Ser	Thr	Leu	Tyr	Lys	Thr	Gln	Val	Lys	Glu	Leu	Lys				
				850						855					860				
Glu	Glu	Ile	Glu	Glu	Lys	Asn	Arg	Glu	Asn	Leu	Lys	Lys	Ile	Gln	Glu				
				865						870					875				880
Leu	Gln	Asn	Glu	Lys	Glu	Thr	Leu	Ala	Thr	Gln	Leu	Asp	Leu	Ala	Glu				
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Thr	Lys	Ala	Glu	Ser	Glu	Gln	Leu	Ala	Arg	Gly	Leu	Leu	Glu	Glu	Gln				
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Tyr	Phe	Glu	Leu	Thr	Gln	Glu	Ser	Lys	Lys	Ala	Ala	Ser	Arg	Asn	Arg				
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Gln	Glu	Ile	Thr	Asp	Lys	Asp	His	Thr	Val	Ser	Arg	Leu	Glu	Glu	Ala				
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Asn	Ser	Met	Leu	Thr	Lys	Asp	Ile	Glu	Ile	Leu	Arg	Arg	Glu	Asn	Glu				
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Glu	Leu	Thr	Glu	Lys	Met	Lys	Lys	Ala	Glu	Glu	Glu	Tyr	Lys	Leu	Glu				
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Lys	Glu	Glu	Glu	Ile	Ser	Asn	Leu	Lys	Ala	Ala	Phe	Glu	Lys	Asn	Ile				
				980						985					990				
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Ile	Met	Asn	Arg	Lys	Asp	Phe	Lys	Ile	Asp	Arg	Lys	Lys	Ala	Asn	Thr				
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Gln	Asp	Leu	Arg	Lys	Lys	Glu	Lys	Glu	Asn	Arg	Lys	Leu	Gln	Leu	Glu				
				1025						1030					1035				104
Leu	Asn	Gln	Glu	Arg	Glu	Lys	Phe	Asn	Gln	Met	Val	Val	Lys	His	Gln				
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Ser	Phe	Pro	Ser	Ala	Asp	Glu	Thr	Asp	Gly	Asn	Leu	Pro	Glu	Ser	Arg				
				1105						1110					1115				112
Ile	Glu	Gly	Trp	Leu	Ser	Val	Pro	Asn	Arg	Gly	Asn	Ile	Lys	Arg	Tyr				
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Gly	Trp	Lys	Lys	Gln	Tyr	Val	Val	Val	Ser	Ser	Lys	Lys	Ile	Leu	Phe				
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Tyr	Asn	Asp	Glu	Gln	Asp	Lys	Glu	Gln	Ser	Asn	Pro	Ser	Met	Val	Leu				
				1155						1160					1165				

Asp Ile Asp Lys Leu Phe His Val Arg Pro Val Thr Gln Gly Asp Val  
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 Tyr Arg Ala Glu Thr Glu Ile Pro Lys Ile Phe Gln Ile Leu Tyr  
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 Ala Asn Glu Gly Glu Cys Arg Lys Asp Val Glu Met Glu Pro Val Gln  
 1205 1210 1215  
 Gln Ala Glu Lys Thr Asn Phe Gln Asn His Lys Gly His Glu Phe Ile  
 1220 1225 1230  
 Pro Thr Leu Tyr His Phe Pro Ala Asn Cys Asp Ala Cys Ala Lys Pro  
 1235 1240 1245  
 Leu Trp His Val Phe Lys Pro Pro Pro Ala Leu Glu Cys Arg Arg Cys  
 1250 1255 1260  
 His Val Lys Cys His Arg Asp His Leu Asp Lys Lys Glu Asp Leu Ile  
 1265 1270 1275 1280  
 Cys Pro Cys Lys Val Ser Tyr Asp Val Thr Ser Ala Arg Asp Met Leu  
 1285 1290 1295  
 Leu Leu Ala Cys Ser Gln Asp Glu Gln Lys Lys Trp Val Thr His Leu  
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 Val Lys Lys Ile Pro Lys Asn Pro Pro Ser Gly Phe Val Arg Ala Ser  
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 Val Val Lys Asn Thr Ser Gly Lys Thr Ser  
 1345 1350

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 <211> 683  
 <212> DNA  
 <213> Homo Sapiens

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 gcaaaacgga caaaaacctc tctaaactga aaagtgtccc gcccattgcc cctgccccag 480  
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 cagctctggg gtcactcaaa gac 683

<210> 160  
 <211> 227  
 <212> PRT  
 <213> Homo Sapiens

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 20 25 30  
 Val Ser Ala Tyr Asp Gln Leu Lys Ala Pro Ala Ser Pro Gly Ala Gly

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Pro Gly Ser Ile Ile Gly Ala Lys Ala Gly Lys Asn Ser Gly Lys Lys
  65              70              75              80
Lys Gly Leu Asn Asn Glu Leu Asn Asn Leu Pro Val Ile Ser Asn Met
      85              90              95
Thr Ala Ala Leu Asp Ser Cys Ser Ala Ala Asp Gly Ser Leu Ala Ala
     100              105              110
Glu Met Pro Lys Leu Glu Ala Glu Gly Leu Ile Asp Lys Lys Asn Leu
     115              120              125
Gly Asp Lys Glu Lys Gly Lys Lys Ala Asn Asn Cys Lys Thr Asp Lys
     130              135              140
Asn Leu Ser Lys Leu Lys Ser Ala Arg Pro Ile Ala Pro Ala Pro Ala
  145              150              155              160
Pro Thr Pro Pro Gln Leu Ile Ala Ile Pro Thr Ala Thr Phe Thr Thr
      165              170              175
Thr Thr Thr Gly Thr Ile Pro Gly Leu Pro Ser Leu Thr Thr Thr Val
     180              185              190
Val Gln Ala Thr Pro Lys Ser Pro Pro Leu Lys Pro Ile Gln Pro Lys
     195              200              205
Pro Thr Ile Met Gly Glu Pro Ile Thr Val Asn Pro Ala Leu Val Ser
     210              215              220
Leu Lys Asp
  225

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<210> 161  
 <211> 662  
 <212> DNA  
 <213> Homo Sapiens

```

<400> 161
accacacagca gttgcacttg ctgagcaggc agcttgagga cccaaatggt agctttttcta      60
acgctgagat gactgaactg agtgtggcac agaaaccaga aaaacttttg gagcgctgca      120
agtactggcc tgcttgtaaa aatggggatg agtgtgccta ccatcacccc atctcaccct      180
gcaaagcctt cccaattgt aaatttgctg aaaaatgttt gtttgttcac ccaaattgta      240
aatatgatgc aaagtgtact aaaccagatt gtcccttcac tcatgtgagt agaagaattc      300
cagtactgtc tccaaaacca gttgcaccac cagcaccacc ttccagtagt cagctctgcc      360
gttacttccc tgcttgtaag aagatggaat gtcccttcta tcatccaaaa cattgtaggt      420
ttaacactca atgtacaaga ccggactgca cattctacca tcccaccatt aatgtcccac      480
cacgacatgc cttgaaatgg attcgacctc aaaccagcga atagcaccga gtccctgctg      540
gcagaagatc atgcagtttg gaagttttca tgtctgatga aagatctcta cagaacttgt      600
caaatctttg aaacttgga tatattgctt tcataatatg aagggtttatt ggctatctaa      660
aa

```

<210> 162  
 <211> 173  
 <212> PRT  
 <213> Homo Sapiens

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<400> 162
Pro Gln Gln Leu His Leu Leu Ser Arg Gln Leu Glu Asp Pro Asn Gly
  1              5              10              15
Ser Phe Ser Asn Ala Glu Met Ser Glu Leu Ser Val Ala Gln Lys Pro
     20              25              30

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Glu Lys Leu Leu Glu Arg Cys Lys Tyr Trp Pro Ala Cys Lys Asn Gly  
           35                          40                          45  
 Asp Glu Cys Ala Tyr His His Pro Ile Ser Pro Cys Lys Ala Phe Pro  
           50                          55                          60  
 Asn Cys Lys Phe Ala Glu Lys Cys Leu Phe Val His Pro Asn Cys Lys  
 65                          70                          75                          80  
 Tyr Asp Ala Lys Cys Thr Lys Pro Asp Cys Pro Phe Thr His Val Ser  
                           85                          90                          95  
 Arg Arg Ile Pro Val Leu Ser Pro Lys Pro Val Ala Pro Pro Ala Pro  
                           100                          105                          110  
 Pro Ser Ser Ser Gln Leu Cys Arg Tyr Phe Pro Ala Cys Lys Lys Met  
                           115                          120                          125  
 Glu Cys Pro Phe Tyr His Pro Lys His Cys Arg Phe Asn Thr Gln Cys  
           130                          135                          140  
 Thr Arg Pro Asp Cys Thr Phe Tyr His Pro Thr Ile Asn Val Pro Pro  
 145                          150                          155                          160  
 Arg His Ala Leu Lys Trp Ile Arg Pro Gln Thr Ser Glu  
                           165                          170

&lt;210&gt; 163

&lt;211&gt; 2912

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 163

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gcctttcagg	cagaaattgc	ccagttgatg	tcattgatca	tcaatacttt	ctactcgaac	180
aaagagatct	ttctgagaga	gctcatttca	aattcatcag	atgcattgga	caaaatccgg	240
tatgaaactt	tgacagatcc	cagtaaatta	gactctggga	aagagctgca	tattaacctt	300
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gctttgcagg	ctggtgcaga	tatctctatg	attggccagt	tcggtgttgg	tttttattct	480
gcttatttgg	ttgctgagaa	agtaactgtg	atcaccaaac	ataacgatga	tgagcagtac	540
gcttgggagt	cctcagcagg	gggatcattc	acagtgagga	cagacacagg	tgaacctatg	600
ggtcgtggaa	caaaagtatt	cctacacctg	aaagaagacc	aaactgagta	cttggaggaa	660
cgaagaataa	aggagattgt	gaagaaacat	tctcagttta	ttggatatcc	cattactctt	720
tttgtggaga	aggaacgtga	taaagaagta	agcgatgatg	aggctgaaga	aaaggaagac	780
aaagaagaag	aaaaagaaaa	agaagagaaa	gagtcggaag	acaaacctga	aattgaagat	840
gttggttctg	atgaggaaga	agaaaagaag	gatggtgaca	agaagaagaa	gaagaagatt	900
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cccgaacgata	ttactaatga	ggagtacgga	gaattctata	agagcttgac	caatgactgg	1020
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tatctgaact	tcattagagg	ggtggtagac	tcggaggatc	tcctctaaa	catatcccgt	1260
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gagctgttaa	ggtactacac	atctgcctct	ggtgatgaga	tggtttctct	caaggactac	1500
tgcaccagaa	tgaaggagaa	ccagaaacat	atctattata	tcacaggtga	gaccaaggac	1560
caggtagcta	actcagcctt	tgtggaacgt	cttcggaaac	atggcttaga	agtgatctat	1620
atgattgagc	ccattgatga	gtactgtgtc	caacagctga	aggaatttga	ggggaagact	1680
ttagtgtcag	tcaccaaaga	aggcctggaa	cttcagagg	atgaagaaga	gaaaaagaag	1740
caggaagaga	aaaaaacaaa	gtttgagaac	ctctgcaaaa	tcatgaaaga	catattggag	1800

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aaaaaagttg aaaaggtggt tgtgtcaaac cgattggtga catctccatg ctgtattgtc 1860
acaagcacat atggctggac agcaaacatg gagagaatca tgaaagctca agccctaaga 1920
gacaactcaa caatgggtta catggcagca aagaaacacc tggagataaa cctgaccat 1980
tccattattg agaccttaag gcaaaaggca gaggctgata agaacgacaa gtctgtgaag 2040
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gatgacccta ctgctgatga taccagtgtc gctgtaactg aagaaatgcc accccttgaa 2220
ggagatgacg acacatcacg catggaagaa gtagactaat ctctggctga gggatgactt 2280
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gagtttcatg ttggttcttt cacagatggg gtaacgtgca ctgtaagacg tatgtaacat 2520
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tctgcttaaa gttgtaacaa atacagatga gt 2912

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&lt;210&gt; 164

&lt;211&gt; 732

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 164

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Met Pro Glu Glu Thr Gln Thr Gln Asp Gln Pro Met Glu Glu Glu Glu
1          5          10          15
Val Glu Thr Phe Ala Phe Gln Ala Glu Ile Ala Gln Leu Met Ser Leu
20          25          30
Ile Ile Asn Thr Phe Tyr Ser Asn Lys Glu Ile Phe Leu Arg Glu Leu
35          40          45
Ile Ser Asn Ser Ser Asp Ala Leu Asp Lys Ile Arg Tyr Glu Thr Leu
50          55          60
Thr Asp Pro Ser Lys Leu Asp Ser Gly Lys Glu Leu His Ile Asn Leu
65          70          75          80
Ile Pro Asn Lys Gln Asp Arg Thr Leu Thr Ile Val Asp Thr Gly Ile
85          90          95
Gly Met Thr Lys Ala Asp Leu Ile Asn Asn Leu Gly Thr Ile Ala Lys
100          105          110
Ser Gly Thr Lys Ala Phe Met Glu Ala Leu Gln Ala Gly Ala Asp Ile
115          120          125
Ser Met Ile Gly Gln Phe Gly Val Gly Phe Tyr Ser Ala Tyr Leu Val
130          135          140
Ala Glu Lys Val Thr Val Ile Thr Lys His Asn Asp Asp Glu Gln Tyr
145          150          155          160
Ala Trp Glu Ser Ser Ala Gly Gly Ser Phe Thr Val Arg Thr Asp Thr
165          170          175
Gly Glu Pro Met Gly Arg Gly Thr Lys Val Ile Leu His Leu Lys Glu
180          185          190
Asp Gln Thr Glu Tyr Leu Glu Glu Arg Arg Ile Lys Glu Ile Val Lys
195          200          205
Lys His Ser Gln Phe Ile Gly Tyr Pro Ile Thr Leu Phe Val Glu Lys
210          215          220
Glu Arg Asp Lys Glu Val Ser Asp Asp Glu Ala Glu Glu Lys Glu Asp

```



225		230		235		240
Lys Glu Glu Glu Lys	Glu Lys Glu Glu Lys	Glu Ser Glu Asp Lys	Pro			
	245		250		255	
Glu Ile Glu Asp Val	Gly Ser Asp Glu Glu Glu Lys Lys Asp Gly					
	260		265		270	
Asp Lys Lys Lys Lys Lys Lys	Ile Lys Glu Lys Tyr Ile Asp Gln Glu					
	275		280		285	
Glu Leu Asn Lys Thr Lys Pro	Ile Trp Thr Arg Asn Pro Asp Asp Ile					
	290		295		300	
Thr Asn Glu Glu Tyr Gly Glu Phe Tyr Lys	Ser Leu Thr Asn Asp Trp					
305	310		315		320	
Glu Asp His Leu Ala Val Lys His Phe Ser Val Glu Gly Gln Leu Glu						
	325		330		335	
Phe Arg Ala Leu Leu Phe Val Pro Arg Arg Ala Pro Phe Asp Leu Phe						
	340		345		350	
Glu Asn Arg Lys Lys Lys Asn Asn Ile Lys Leu Tyr Val Arg Arg Val						
	355		360		365	
Phe Ile Met Asp Asn Cys Glu Glu Leu Ile Pro Glu Tyr Leu Asn Phe						
	370		375		380	
Ile Arg Gly Val Val Asp Ser Glu Asp Leu Pro Leu Asn Ile Ser Arg						
385	390		395		400	
Glu Met Leu Gln Gln Ser Lys Ile Leu Lys Val Ile Arg Lys Asn Leu						
	405		410		415	
Val Lys Lys Cys Leu Glu Leu Phe Thr Glu Leu Ala Glu Asp Lys Glu						
	420		425		430	
Asn Tyr Lys Lys Phe Tyr Glu Gln Phe Ser Lys Asn Ile Lys Leu Gly						
	435		440		445	
Ile His Glu Asp Ser Gln Asn Arg Lys Lys Leu Ser Glu Leu Leu Arg						
	450		455		460	
Tyr Tyr Thr Ser Ala Ser Gly Asp Glu Met Val Ser Leu Lys Asp Tyr						
465	470		475		480	
Cys Thr Arg Met Lys Glu Asn Gln Lys His Ile Tyr Tyr Ile Thr Gly						
	485		490		495	
Glu Thr Lys Asp Gln Val Ala Asn Ser Ala Phe Val Glu Arg Leu Arg						
	500		505		510	
Lys His Gly Leu Glu Val Ile Tyr Met Ile Glu Pro Ile Asp Glu Tyr						
	515		520		525	
Cys Val Gln Gln Leu Lys Glu Phe Glu Gly Lys Thr Leu Val Ser Val						
	530		535		540	
Thr Lys Glu Gly Leu Glu Pro Glu Asp Glu Glu Lys Lys Lys						
545	550		555		560	
Gln Glu Glu Lys Lys Thr Lys Phe Glu Asn Leu Cys Lys Ile Met Lys						
	565		570		575	
Asp Ile Leu Glu Lys Lys Val Glu Lys Val Val Val Ser Asn Arg Leu						
	580		585		590	
Val Thr Ser Pro Cys Cys Ile Val Thr Ser Thr Tyr Gly Trp Thr Ala						
	595		600		605	
Asn Met Glu Arg Ile Met Lys Ala Gln Ala Leu Arg Asp Asn Ser Thr						
	610		615		620	
Met Gly Tyr Met Ala Ala Lys Lys His Leu Glu Ile Asn Pro Asp His						
625	630		635		640	
Ser Ile Ile Glu Thr Leu Arg Gln Lys Ala Glu Ala Asp Lys Asn Asp						
	645		650		655	
Lys Ser Val Lys Asp Leu Val Ile Leu Leu Tyr Glu Thr Ala Leu Leu						
	660		665		670	

Ser Ser Gly Phe Ser Leu Glu Asp Pro Gln Thr His Ala Asn Arg Ile  
 675 680 685  
 Tyr Arg Met Ile Lys Leu Gly Leu Gly Ile Asp Glu Asp Asp Pro Thr  
 690 695 700  
 Ala Asp Asp Thr Ser Ala Ala Val Thr Glu Glu Met Pro Pro Leu Glu  
 705 710 715 720  
 Gly Asp Asp Asp Thr Ser Arg Met Glu Glu Val Asp  
 725 730

<210> 165  
 <211> 790  
 <212> DNA  
 <213> Homo Sapiens

<400> 165  
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 tgtttaataa ccatggactc caagtacagc agcaacagca aaggaatctc tccactacatg 180  
 aatacatgag tatggaatta ttgcaagaag ctggtgtctc cgttcccaaa ggatatgtgg 240  
 caaagtcacc agatgaagct tatgcaattg ccaaaaaatt aggttcaaaa gatgtcgtga 300  
 taaaggcaca ggtttttagct ggtggtagag gaaaaggaac atttgaaagt ggcctcaaag 360  
 gaggagtga gtagtatttc tctccagaag aagcaaaagc tgttcttcca caaatgattg 420  
 ggaaaaaatt gtttaccaag caaacgggag aaaagggcag aatatgcaat caagtattgg 480  
 tctgtgagcg aaaatatccc aggagagaat actactttgc aataacaatg gaaagggtcat 540  
 ttcaaggctc tgtattaata ggaagttcac atggtggtgt caacattgaa gatgttgctg 600  
 ctgagctctc tgaagcaata attaaagaac ctattgatat tgaagaaggc atcaaaaagg 660  
 aacaagctct tcagcttgca cagaagaatg ggatttcccc taatattgng ggaatcagca 720  
 gcaggaaaac atggtcaagc tttacagnen ttttcttgaa atacgatgca acccttgata 780  
 ggaaattaaa 790

<210> 166  
 <211> 259  
 <212> PRT  
 <213> Homo Sapiens

<400> 166  
 Asp Ser Glu Met Ala Ala Ser Met Phe Tyr Gly Arg Leu Val Ala Val  
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 Ala Thr Leu Arg Asn His Arg Pro Arg Thr Ala Gln Arg Ala Ala Ala  
 20 25 30  
 Gln Val Leu Gly Ser Ser Gly Leu Phe Asn Asn His Gly Leu Gln Val  
 35 40 45  
 Gln Gln Gln Gln Arg Asn Leu Ser Leu His Glu Tyr Met Ser Met  
 50 55 60  
 Glu Leu Leu Gln Glu Ala Gly Val Ser Val Pro Lys Gly Tyr Val Ala  
 65 70 75 80  
 Lys Ser Pro Asp Glu Ala Tyr Ala Ile Ala Lys Lys Leu Gly Ser Lys  
 85 90 95  
 Asp Val Val Ile Lys Ala Gln Val Leu Ala Gly Gly Arg Gly Lys Gly  
 100 105 110  
 Thr Phe Glu Ser Gly Leu Lys Gly Gly Val Lys Ile Val Phe Ser Pro  
 115 120 125  
 Glu Glu Ala Lys Ala Val Ser Ser Gln Met Ile Gly Lys Lys Leu Phe  
 130 135 140  
 Thr Lys Gln Thr Gly Glu Lys Gly Arg Ile Cys Asn Gln Val Leu Val

145		150		155		160									
Cys	Glu	Arg	Lys	Tyr	Pro	Arg	Arg	Glu	Tyr	Tyr	Phe	Ala	Ile	Thr	Met
		165		170		175									
Glu	Arg	Ser	Phe	Gln	Gly	Pro	Val	Leu	Ile	Gly	Ser	Ser	His	Gly	Gly
		180		185		190									
Val	Asn	Ile	Glu	Asp	Val	Ala	Ala	Glu	Ser	Pro	Glu	Ala	Ile	Ile	Lys
	195			200		205									
Glu	Pro	Ile	Asp	Ile	Glu	Glu	Gly	Ile	Lys	Lys	Glu	Gln	Ala	Leu	Gln
	210			215		220									
Leu	Ala	Gln	Lys	Asn	Gly	Ile	Ser	Pro	Asn	Ile	Gly	Ile	Ser	Ser	Arg
	225			230		235									
Lys	Thr	Trp	Ser	Ser	Phe	Thr	Phe	Leu	Lys	Tyr	Asp	Ala	Thr	Leu	Asp
		245		250		255									
Arg	Lys	Leu													

<210> 167  
 <211> 5307  
 <212> DNA  
 <213> Homo Sapiens

<400> 167

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gagagtggac	gtaaagtgtt	ctcactaaac	aaattataac	tatgtgaggt	agtgcataata	180
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atgagaaaca	cagttttatc	tgtagtcag	ttttaaaaaat	aaaaaatatt	ccaactagaa	300
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atgtttaaca	tctgaaagca	aagtgtacca	acctgtatct	tgtcccctaa	gtgacttata	1980

tgagaatgta	gagtcagtg	ttaatgaaga	aaaaataaca	gagagttccc	tagtagaaat	2040
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atcttctgag	ggtgaaatta	tacagacagt	ggacagacaa	tctgttaaga	gccagaggt	2160
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aagatctcag	ccaagagtga	aagattcttc	cccaggagaa	aaatccaggt	cccagagcag	3000
agaacgagaa	agtgatagag	atgggcagag	gagagagaga	gaaaggagaa	ccagaaagtg	3060
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atgtattacc	atgaaaaatg	tttctaatat	taaatagaac	atatcagttg	caaagttcct	5160
aatgtgtatt	tttaaagcac	atatctgaat	aaattgccta	gatagaaaaa	aaattatcac	5220
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ggttatgctg cttgttacgc gaaggcc

5307

<210> 168  
 <211> 1148  
 <212> PRT  
 <213> Homo Sapiens

<400> 168  
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 20 25 30  
 Ala Pro Gly Asn Ser Asn Pro Ser Leu Ser Val Pro Ser Ser Ala Glu  
 35 40 45  
 Ser Glu Lys Gln Thr Arg Gln Ala Pro Lys Arg Lys Ser Val Arg Arg  
 50 55 60  
 Gly Arg Lys Pro Pro Leu Lys Lys Lys Leu Arg Ser Ser Val Ala  
 65 70 75 80  
 Ala Pro Glu Lys Ser Ser Ser Asn Asp Ser Val Asp Glu Glu Thr Ala  
 85 90 95  
 Glu Ser Asp Thr Ser Pro Val Leu Glu Lys Glu His Gln Pro Asp Val  
 100 105 110  
 Asp Ser Ser Asn Ile Cys Thr Val Gln Thr His Val Glu Asn Gln Ser  
 115 120 125  
 Ala Asn Cys Leu Lys Ser Cys Asn Glu Gln Ile Glu Glu Ser Glu Lys  
 130 135 140  
 His Thr Ala Asn Tyr Asp Thr Glu Glu Arg Val Gly Ser Ser Ser Ser  
 145 150 155 160  
 Glu Ser Cys Ala Gln Asp Leu Pro Val Leu Val Gly Glu Glu Gly Glu  
 165 170 175  
 Val Lys Lys Leu Glu Asn Thr Gly Ile Glu Ala Asn Val Leu Cys Leu  
 180 185 190  
 Glu Ser Glu Ile Ser Glu Asn Ile Leu Glu Lys Gly Gly Asp Pro Leu  
 195 200 205  
 Glu Lys Gln Asp Gln Ile Ser Gly Leu Ser Gln Ser Glu Val Lys Thr  
 210 215 220  
 Asp Val Cys Thr Val His Leu Pro Asn Asp Phe Pro Thr Cys Leu Thr  
 225 230 235 240  
 Ser Glu Ser Lys Val Tyr Gln Pro Val Ser Cys Pro Leu Ser Asp Leu  
 245 250 255  
 Ser Glu Asn Val Glu Ser Val Val Asn Glu Lys Ile Thr Glu Ser  
 260 265 270  
 Ser Leu Val Glu Ile Thr Glu His Lys Asp Phe Thr Leu Lys Thr Glu  
 275 280 285  
 Glu Leu Ile Glu Ser Pro Lys Leu Glu Ser Ser Glu Gly Glu Ile Ile  
 290 295 300  
 Gln Thr Val Asp Arg Gln Ser Val Lys Ser Pro Glu Val Gln Leu Leu  
 305 310 315 320  
 Gly His Val Glu Thr Glu Asp Val Glu Ile Ile Ala Thr Cys Asp Thr  
 325 330 335  
 Phe Gly Asn Glu Asp Phe Asn Asn Ile Gln Asp Ser Glu Asn Asn Leu  
 340 345 350  
 Leu Lys Asn Asn Leu Leu Asn Thr Lys Leu Glu Lys Ser Leu Glu Glu

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          355          360          365
Lys Asn Glu Ser Leu Thr Glu His Pro Arg Ser Thr Glu Leu Pro Lys
  370          375          380
Thr His Ile Glu Gln Ile Gln Lys His Phe Ser Glu Asp Asn Asn Glu
385          390          395          400
Met Ile Pro Met Glu Cys Asp Ser Phe Cys Ser Asp Gln Asn Glu Ser
          405          410          415
Glu Val Glu Pro Ser Val Asn Ala Asp Leu Lys Gln Met Asn Glu Asn
          420          425          430
Ser Val Thr His Cys Ser Glu Asn Asn Met Pro Ser Ser Asp Leu Ala
          435          440          445
Asp Glu Lys Val Glu Thr Val Ser Gln Pro Ser Glu Ser Pro Lys Asp
          450          455          460
Thr Ile Asp Lys Thr Lys Lys Pro Arg Thr Arg Arg Ser Arg Phe His
465          470          475          480
Ser Pro Ser Thr Thr Trp Ser Pro Asn Lys Asp Thr Pro Gln Glu Lys
          485          490          495
Lys Arg Pro Gln Ser Pro Ser Pro Arg Arg Glu Thr Gly Lys Glu Ser
          500          505          510
Arg Lys Ser Gln Ser Pro Ser Pro Lys Asn Glu Ser Ala Arg Gly Arg
          515          520          525
Lys Lys Ser Arg Ser Gln Ser Pro Lys Lys Asp Ile Ala Arg Glu Arg
          530          535          540
Arg Gln Ser Gln Ser Arg Ser Pro Lys Arg Asp Thr Thr Arg Glu Ser
545          550          555          560
Arg Arg Ser Glu Ser Leu Ser Pro Arg Arg Glu Thr Ser Arg Glu Asn
          565          570          575
Lys Arg Ser Gln Pro Arg Val Lys Asp Ser Ser Pro Gly Glu Lys Ser
          580          585          590
Arg Ser Gln Ser Arg Glu Arg Glu Ser Asp Arg Asp Gly Gln Arg Arg
          595          600          605
Glu Arg Glu Arg Arg Thr Arg Lys Trp Ser Arg Ser Arg Ser His Ser
          610          615          620
Arg Ser Pro Ser Arg Cys Arg Thr Lys Ser Lys Ser Ser Ser Phe Gly
625          630          635          640
Arg Ile Asp Arg Asp Ser Tyr Ser Pro Arg Trp Lys Gly Arg Trp Ala
          645          650          655
Asn Asp Gly Trp Arg Cys Pro Arg Gly Asn Asp Arg Tyr Arg Lys Asn
          660          665          670
Asp Pro Glu Lys Gln Asn Glu Asn Thr Arg Lys Glu Lys Asn Asp Ile
          675          680          685
His Leu Asp Ala Asp Asp Pro Asn Ser Ala Asp Lys His Arg Asn Asp
          690          695          700
Cys Pro Asn Trp Ile Thr Glu Lys Ile Asn Ser Gly Pro Asp Pro Arg
705          710          715          720
Thr Arg Asn Pro Glu Lys Leu Lys Glu Ser His Trp Glu Glu Asn Arg
          725          730          735
Asn Glu Asn Ser Gly Asn Ser Trp Asn Lys Asn Phe Gly Ser Gly Trp
          740          745          750
Val Ser Asn Arg Gly Arg Gly Arg Gly Asn Arg Gly Arg Gly Thr Tyr
          755          760          765
Arg Ser Ser Phe Ala Tyr Lys Asp Gln Asn Glu Asn Arg Trp Gln Asn
          770          775          780
Arg Lys Pro Leu Ser Gly Asn Ser Asn Ser Ser Gly Ser Glu Ser Phe
785          790          795          800

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<210> 169
<211> 597
<212> DNA
<213> Homo Sapiens
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-132-

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gcaaacaagg	gacaggccct	caaagttgtc	ggtagggagc	caggaccccc	ccagtggcgt	420
ggggagacac	cgtactaaac	aagcttgcaa	acagcaggca	ccttcctgcc	actgaggagg	480
aagggtctgg	taaggagggc	cggggcggag	gaagccaagc	tctgcaggcc	ctgacaaagt	540
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&lt;210&gt; 170

&lt;211&gt; 3344

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 170

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aggagctggg	gacggcgacc	ctaggagagt	tctttgggggt	gactttcaag	atggactcta	120
ctctaacagc	aagtgaatc	cggcagcgat	ttatagattt	cttcaagagg	aacgagcata	180
cgtatgttca	ctcgtctgcc	accatccccat	tggatgaccc	cactttgtct	tttgccaatg	240
caggcatgaa	ccagtttaaa	cccattttcc	tgaacacaat	tgacccatct	caccccatgg	300
caaagctgag	cagagctgcc	aatacccaga	agtgcacccg	ggctggggggc	aaacaaaatg	360
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aagagtttgg	cattcccatt	gaaagacttt	atgttactta	ctttggcggg	gatgaagcag	540
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agactgctcc	aaacaaggat	gtgcagaggg	agatcgctga	ccttggagag	gccctggcca	2520



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ctgcagtcac cccccagtgagg cagaaggatg aattgcggga gactctcaaa tccctaaaga 2580
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tgatcgtcac gctcgcatct atagataacg gctctccaga cctgagcttt ccgcgtcagc 3300
aagtaggaat cgtttttgct gcagagaata aaaggaccac gtgc 3344

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&lt;210&gt; 171

&lt;211&gt; 1004

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 171

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Tyr Ser Cys Ala Ser Ala Gly Ile Gly Ala Ala Gly Pro Trp Arg Gly
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Thr Leu Arg Glu Leu Gly Thr Ala Thr Leu Gly Glu Phe Phe Gly
20     25     30
Val Thr Phe Lys Met Asp Ser Thr Leu Thr Ala Ser Glu Ile Arg Gln
35     40     45
Arg Phe Ile Asp Phe Phe Lys Arg Asn Glu His Thr Tyr Val His Ser
50     55     60
Ser Ala Thr Ile Pro Leu Asp Asp Pro Thr Leu Leu Phe Ala Asn Ala
65     70     75     80
Gly Met Asn Gln Phe Lys Pro Ile Phe Leu Asn Thr Ile Asp Pro Ser
85     90     95
His Pro Met Ala Lys Leu Ser Arg Ala Ala Asn Thr Gln Lys Cys Ile
100    105    110
Arg Ala Gly Gly Lys Gln Asn Asp Leu Asp Asp Val Gly Lys Asp Val
115    120    125
Tyr His His Thr Phe Phe Glu Met Leu Gly Ser Trp Ser Phe Gly Asp
130    135    140
Tyr Phe Lys Glu Leu Ala Cys Lys Met Ala Leu Glu Leu Leu Thr Gln
145    150    155    160
Glu Phe Gly Ile Pro Ile Glu Arg Leu Tyr Val Thr Tyr Phe Gly Gly
165    170    175
Asp Glu Ala Ala Gly Leu Glu Ala Asp Leu Glu Cys Lys Gln Ile Trp
180    185    190
Gln Asn Leu Gly Leu Asp Asp Thr Lys Ile Leu Pro Gly Asn Met Lys
195    200    205
Asp Asn Phe Trp Glu Met Gly Asp Thr Gly Pro Cys Gly Pro Cys Ser
210    215    220
Glu Ile His Tyr Asp Arg Ile Gly Gly Arg Asp Ala Ala His Leu Val
225    230    235    240
Asn Gln Asp Asp Pro Asn Val Leu Glu Ile Trp Asn Leu Val Phe Ile
245    250    255
Gln Tyr Asn Arg Glu Ala Asp Gly Ile Leu Lys Pro Leu Pro Lys Lys
260    265    270

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Ser Ile Asp Thr Gly Met Gly Leu Glu Arg Leu Val Ser Val Leu Gln  
 275 280 285  
 Asn Lys Met Ser Asn Tyr Asp Thr Asp Leu Phe Val Pro Tyr Phe Glu  
 290 295 300  
 Ala Ile Gln Lys Gly Thr Gly Ala Arg Pro Tyr Thr Gly Lys Val Gly  
 305 310 315 320  
 Ala Glu Asp Ala Asp Gly Ile Asp Met Ala Tyr Arg Val Leu Ala Asp  
 325 330 335  
 His Ala Arg Thr Ile Thr Val Ala Leu Ala Asp Gly Gly Arg Pro Asp  
 340 345 350  
 Asn Thr Gly Arg Gly Tyr Val Leu Arg Arg Ile Leu Arg Arg Ala Val  
 355 360 365  
 Arg Tyr Ala His Glu Lys Leu Asn Ala Ser Arg Gly Phe Phe Ala Thr  
 370 375 380  
 Leu Val Asp Val Val Val Gln Ser Leu Gly Asp Ala Phe Pro Glu Leu  
 385 390 395 400  
 Lys Lys Asp Pro Asp Met Val Lys Asp Ile Ile Asn Glu Glu Glu Val  
 405 410 415  
 Gln Phe Leu Lys Thr Leu Ser Arg Gly Arg Arg Ile Leu Asp Arg Lys  
 420 425 430  
 Ile Gln Ser Leu Gly Asp Ser Lys Thr Ile Pro Gly Asp Thr Ala Trp  
 435 440 445  
 Leu Leu Tyr Asp Thr Tyr Gly Phe Pro Val Asp Leu Thr Gly Leu Ile  
 450 455 460  
 Ala Glu Glu Lys Gly Leu Val Val Asp Met Asp Gly Phe Glu Glu Glu  
 465 470 475 480  
 Arg Lys Leu Ala Gln Leu Lys Ser Gln Gly Lys Gly Ala Gly Gly Glu  
 485 490 495  
 Asp Leu Ile Met Leu Asp Ile Tyr Ala Ile Glu Glu Leu Arg Ala Arg  
 500 505 510  
 Gly Leu Glu Val Thr Asp Asp Ser Pro Lys Tyr Asn Tyr His Leu Asp  
 515 520 525  
 Ser Ser Gly Ser Tyr Val Phe Glu Asn Thr Val Ala Thr Val Met Ala  
 530 535 540  
 Leu Arg Arg Glu Lys Met Phe Val Glu Glu Val Ser Thr Gly Gln Glu  
 545 550 555 560  
 Cys Gly Val Val Leu Asp Lys Thr Cys Phe Tyr Ala Glu Gln Gly Gly  
 565 570 575  
 Gln Ile Tyr Asp Glu Gly Tyr Leu Val Lys Val Asp Asp Ser Ser Glu  
 580 585 590  
 Asp Lys Thr Glu Phe Thr Val Lys Asn Ala Gln Val Arg Gly Gly Tyr  
 595 600 605  
 Val Leu His Ile Gly Thr Ile Tyr Gly Asp Leu Lys Val Gly Asp Gln  
 610 615 620  
 Val Trp Leu Phe Ile Asp Glu Pro Arg Arg Arg Pro Ile Met Ser Asn  
 625 630 635 640  
 His Thr Ala Thr His Ile Leu Asn Phe Ala Leu Arg Ser Val Leu Gly  
 645 650 655  
 Glu Ala Asp Gln Lys Gly Ser Leu Val Ala Pro Asp Arg Leu Arg Phe  
 660 665 670  
 Asp Phe Thr Ala Lys Gly Ala Met Ser Thr Gln Gln Ile Lys Lys Ala  
 675 680 685  
 Glu Glu Ile Ala Asn Glu Met Ile Glu Ala Ala Lys Ala Val Tyr Thr  
 690 695 700  
 Gln Asp Cys Pro Leu Ala Ala Ala Lys Ala Ile Gln Gly Leu Arg Ala

```

705              710              715              720
Val Phe Asp Glu Thr Tyr Pro Asp Pro Val Arg Val Val Ser Ile Gly
              725              730              735
Val Pro Val Ser Glu Leu Leu Asp Asp Pro Ser Gly Pro Ala Gly Ser
              740              745              750
Leu Thr Ser Val Glu Phe Cys Gly Gly Thr His Leu Arg Asn Ser Ser
              755              760              765
His Ala Gly Ala Phe Val Ile Val Thr Glu Glu Ala Ile Ala Lys Gly
              770              775              780
Ile Arg Arg Ile Val Ala Val Thr Gly Ala Glu Ala Gln Lys Ala Leu
785              790              795              800
Arg Lys Ala Glu Ser Leu Lys Lys Cys Leu Ser Val Met Glu Ala Lys
              805              810              815
Val Lys Ala Gln Thr Ala Pro Asn Lys Asp Val Gln Arg Glu Ile Ala
              820              825              830
Asp Leu Gly Glu Ala Leu Ala Thr Ala Val Ile Pro Gln Trp Gln Lys
              835              840              845
Asp Glu Leu Arg Glu Thr Leu Lys Ser Leu Lys Lys Val Met Asp Asp
              850              855              860
Leu Asp Arg Ala Ser Lys Ala Asp Val Gln Lys Arg Val Leu Glu Lys
865              870              875              880
Thr Lys Gln Phe Ile Asp Ser Asn Pro Asn Gln Pro Leu Val Ile Leu
              885              890              895
Glu Met Glu Ser Gly Ala Ser Ala Lys Ala Leu Asn Glu Ala Leu Lys
              900              905              910
Leu Phe Lys Met His Ser Pro Gln Thr Ser Ala Met Leu Phe Thr Val
              915              920              925
Asp Asn Glu Ala Gly Lys Ile Thr Cys Leu Cys Gln Val Pro Gln Asn
              930              935              940
Ala Ala Asn Arg Gly Leu Lys Ala Ser Glu Trp Val Gln Gln Val Ser
945              950              955              960
Gly Leu Met Asp Gly Lys Gly Gly Gly Lys Asp Val Ser Ala Gln Ala
              965              970              975
Thr Gly Lys Asn Val Gly Cys Leu Gln Glu Ala Leu Gln Leu Ala Thr
              980              985              990
Ser Phe Ala Gln Leu Arg Leu Gly Asp Val Lys Asn
              995              1000

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<210> 172  
 <211> 659  
 <212> DNA  
 <213> Homo Sapiens

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<400> 172
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gaaccaaccg agtcggatcc tgaccctaaa acctagtatt ttccacttgt tcatcaatat      180
ggaaaactca gattccaatg acaaaggaag tggatgatcag tctgcagcac agcgcagaag      240
tcagatggac cgattggatc gagaagaagc tttctatcaa tttgtaaata acctgagtga      300
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gcttaactct gtcagacaaa ctggaaatac aacaagaagt gggcaaagag gaaaccaatc      540
ttggagagca gtgagtcgga ctaatccaaa cagtgggtga tttcagattc agtttagaga      600
taaattgtaa cccgtaataa tgggagccaa aattcagaga atgaaaatga gccatctgc      659

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<210> 173  
 <211> 192  
 <212> PRT  
 <213> Homo Sapiens

<400> 173  
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 20 25 30  
 Glu Gln Pro Arg Arg Arg Arg Pro Asn Gln Pro Ser Arg Ile Leu Thr  
 35 40 45  
 Leu Lys Pro Ser Ile Phe His Leu Phe Ile Asn Met Glu Asn Ser Asp  
 50 55 60  
 Ser Asn Asp Lys Gly Ser Gly Asp Gln Ser Ala Ala Gln Arg Arg Ser  
 65 70 75 80  
 Gln Met Asp Arg Leu Asp Arg Glu Glu Ala Phe Tyr Gln Phe Val Asn  
 85 90 95  
 Asn Leu Ser Glu Glu Asp Tyr Arg Leu Met Arg Asp Asn Asn Leu Leu  
 100 105 110  
 Gly Thr Pro Gly Glu Ser Thr Glu Glu Glu Leu Leu Arg Arg Leu Gln  
 115 120 125  
 Gln Ile Lys Glu Gly Pro Pro Gln Asn Ser Asp Glu Asn Arg Gly  
 130 135 140  
 Gly Asp Ser Ser Asp Asp Val Ser Asn Gly Asp Ser Ile Ile Asp Trp  
 145 150 155 160  
 Leu Asn Ser Val Arg Gln Thr Gly Asn Thr Thr Arg Ser Gly Gln Arg  
 165 170 175  
 Gly Asn Gln Ser Trp Arg Ala Val Ser Arg Thr Asn Pro Asn Ser Gly  
 180 185 190

<210> 174  
 <211> 610  
 <212> DNA  
 <213> Homo Sapiens

<400> 174  
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 caaccccaaa tctgccacag agcagtcagg aactgggtatc cgatcagaga gtgagacaga 180  
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<210> 175  
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 <212> PRT  
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<400> 175

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 Phe Ala Lys Ala Thr Ala Gln Asp Asn Pro Lys Ser Ala Thr Glu Gln  
 35 40 45  
 Ser Gly Thr Gly Ile Arg Ser Glu Ser Glu Thr Glu Ser Glu Ala Ser  
 50 55 60  
 Glu Ile Thr Ile Pro Pro Ser Thr Pro Ala Val Pro Gln Ala Pro Val  
 65 70 75 80  
 Gln Gly Glu Asp Tyr Gly Lys Gly Val Ile Phe Tyr Leu Arg Asp Lys  
 85 90 95  
 Val Val Val Gly Ile Val Leu Trp Asn Ile Phe Asn Arg Met Pro Ile  
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 Ala Arg Lys Ile Ile Lys Asp Gly Glu Gln His Glu Asp Leu Asn Glu  
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 Val Ala Lys Leu Phe Asn Ile His Glu Asp  
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&lt;210&gt; 176

&lt;211&gt; 805

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 176

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&lt;210&gt; 177

&lt;211&gt; 626

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 177

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caggtttgca ggcaggccgt catgagtgcc ggtggaaggc tccgaggggc tgggcagggg      180
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 <213> Homo Sapiens

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<210> 182  
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 <212> DNA  
 <213> Homo Sapiens

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 gtccancaa cagngtnaaa gggtcnnaan tcnccaaaat cctctccaag caccngttgt 660  
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<210> 184  
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 ttggattttt ccgtt 855

<210> 185  
 <211> 865  
 <212> DNA  
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&lt;210&gt; 186

&lt;211&gt; 736

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 186

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tacttaaaat	tgggtt					736

&lt;210&gt; 187

&lt;211&gt; 946

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 187

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&lt;210&gt; 188

&lt;211&gt; 802

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 188

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&lt;210&gt; 189

&lt;211&gt; 807

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 189

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&lt;210&gt; 190

&lt;211&gt; 608

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 190

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 ttctggangg ccatttggga aaacccaaac ctcgggctcn acaaccctgt ccangcctgt 720  
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 <212> DNA  
 <213> Homo Sapiens

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 gggctagcca ggttgccggg cacaccgaaa ggggtccttg ggcgggtgaa cctgctgcat 720  
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<210> 193  
 <211> 744  
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 <213> Homo Sapiens

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 <212> DNA  
 <213> Homo Sapiens

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 <212> DNA  
 <213> Homo Sapiens

<400> 195						
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ccaagaaaga	ancanaaaag	aaagcaaaaag	cagaagctaa	acggaaggag	caagaagcta	180
aagaaaaaca	aagacaagct	gaattagaag	ctgctcggtt	agctaaggag	aaagaagagg	240
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 <211> 561  
 <212> DNA  
 <213> Homo Sapiens

<400> 196						
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tccttgatc	gtttcatgca	gtccttcttt	gtcctgccag	gcaccgcttc	tgctattttt	180
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antgtngnat	naccgncngn	c				561

&lt;210&gt; 197

&lt;211&gt; 691

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 197

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&lt;210&gt; 198

&lt;211&gt; 646

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 198

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&lt;210&gt; 199

&lt;211&gt; 811

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 199

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&lt;210&gt; 200

&lt;211&gt; 763

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 200

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&lt;210&gt; 201

&lt;211&gt; 717

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 201

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&lt;210&gt; 202

&lt;211&gt; 647

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 202

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&lt;210&gt; 203

&lt;211&gt; 786

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 203

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&lt;210&gt; 204

&lt;211&gt; 738

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 204

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&lt;210&gt; 205

&lt;211&gt; 818

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 205

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&lt;211&gt; 927

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 206

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&lt;210&gt; 207

&lt;211&gt; 910

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 207

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&lt;210&gt; 208

&lt;211&gt; 745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 208

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&lt;211&gt; 965

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 209

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&lt;210&gt; 210

&lt;211&gt; 867

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 210

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&lt;211&gt; 972

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 211

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&lt;210&gt; 212

&lt;211&gt; 817

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 212

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 213

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 214

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&lt;212&gt; DNA

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 217

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 <212> DNA  
 <213> Homo Sapiens

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 <213> Homo Sapiens

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&lt;211&gt; 833

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 221

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&lt;210&gt; 222

&lt;211&gt; 745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 222

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&lt;210&gt; 223

&lt;211&gt; 747

&lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 223

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&lt;210&gt; 224

&lt;211&gt; 618

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;210&gt; 225

&lt;211&gt; 765

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;211&gt; 552

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 229

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&lt;210&gt; 230

&lt;211&gt; 842

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 230

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&lt;210&gt; 231

&lt;211&gt; 781

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 231

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&lt;210&gt; 232

&lt;211&gt; 767

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 232

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&lt;210&gt; 233

&lt;211&gt; 879

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 233

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&lt;210&gt; 234

&lt;211&gt; 780

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 234

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&lt;210&gt; 235

&lt;211&gt; 780

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 235

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&lt;210&gt; 236

&lt;211&gt; 711

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 236

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gtttttcaag	ttgtctgcatt	aagtcttgca	cctggatttt	gtgagcatct	aactcagtac	300
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<211> 658

<212> DNA

<213> Homo Sapiens

<400> 237

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<210> 238

<211> 678

<212> DNA

<213> Homo Sapiens

<400> 238

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<210> 239

<211> 1402

<212> DNA

<213> Homo Sapiens

<400> 239

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 <213> Homo Sapiens

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 <213> Homo Sapiens

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 <212> DNA  
 <213> Homo Sapiens

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 ntcaancant ttaaccttc 799

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 <212> DNA  
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aatgtt						726

&lt;210&gt; 245

&lt;211&gt; 592

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 245

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&lt;210&gt; 246

&lt;211&gt; 821

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 246

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&lt;210&gt; 247

&lt;211&gt; 639

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 247

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&lt;210&gt; 248

&lt;211&gt; 846

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 248

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&lt;210&gt; 249

&lt;211&gt; 763

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 249

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&lt;210&gt; 250

&lt;211&gt; 899

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens



&lt;400&gt; 250

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&lt;210&gt; 251

&lt;211&gt; 755

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 251

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&lt;210&gt; 252

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 252

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<211> 793

<212> DNA

<213> Homo Sapiens

<400> 253

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<211> 625

<212> DNA

<213> Homo Sapiens

<400> 254

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<210> 255

<211> 907

<212> DNA

<213> Homo Sapiens

<400> 255

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&lt;210&gt; 256

&lt;211&gt; 794

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 256

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&lt;210&gt; 257

&lt;211&gt; 885

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 257

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&lt;210&gt; 258

&lt;211&gt; 798

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 258

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&lt;210&gt; 259

&lt;211&gt; 831

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 259

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&lt;210&gt; 260

&lt;211&gt; 772

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 260

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&lt;210&gt; 261

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 261

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&lt;211&gt; 659

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 262

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&lt;211&gt; 673

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 263

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&lt;210&gt; 264

&lt;211&gt; 661

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 264

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&lt;210&gt; 265

&lt;211&gt; 659

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 265

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&lt;210&gt; 266

&lt;211&gt; 620

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 266

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&lt;210&gt; 267

&lt;211&gt; 745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 267

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 268

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&lt;211&gt; 737

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 269

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&lt;211&gt; 726

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 270

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&lt;211&gt; 814

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 271

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&lt;211&gt; 862

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens



&lt;400&gt; 272

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 273

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&lt;210&gt; 274

&lt;211&gt; 863

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 274

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anggacgggg	ctcaaacaat	gaacctcant	tacctttcng	gctgagtcce	cnaaagcaac	780
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&lt;210&gt; 278

&lt;211&gt; 1358

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 278

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tggtgggtctt	ggtctgcctc	cagctcttgg	aggcagcagt	ggtcaaagtg	cccctgaaga	120
aattttaagtc	tatccgtgag	accatgaagg	agaagggtct	gctgggggag	ttcctgagga	180
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ccatggccta	catggatgct	gcctactttg	gtgagatcag	catcgggact	ccaccccaga	300
acttctctgg	ccttttttgac	accggctcct	ccaacttgtg	ggtgccctct	gtctactgcc	360
agagccaggc	ctgcaccagt	cactcccgct	tcaaccccag	cgagtcgtcc	acctaactcca	420
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&lt;210&gt; 279

&lt;211&gt; 702

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 279

gaagcaatga	atacgcaatt	agaactttca	gaacaactta	aatttcagaa	caactctgaa	60
gataatgtta	aaaaactaca	agaagagatt	gagaaaatta	ggccaggctt	tgaggagcaa	120
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caggaagagc	ttttacagtt	gaaagctata	caccaagaag	aggtgaaaga	gttgatgtgc	300
cagattgaag	catcagctaa	ggaacatgaa	gcagagataa	ataagttgaa	cgagctaaaa	360
gagaacttag	taaaacaatg	tgaggcaagt	gaaaagaaca	tccagaagaa	atatgaatgt	420
gagttagaaa	atttaaggaa	agccacctca	aatgcaaacc	aagacaatca	gatatgttct	480
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agaagataacc	ttaaaaagaa	cttgaatctc	aacacagtat	cttaaaaaga	tgagggtaac	600
ttatatgaat	aatccttaag	tttaaaactt	gaaaatggga	tgcttcaacc	attttaaagg	660
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&lt;210&gt; 280

&lt;211&gt; 874

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 280

aactcaaaac	agtgttaagt	tcctatgctg	ttagtactgt	atcttgtcca	cacctcaaac	60
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acgaactgtg	tttttaacaa	ctcattatct	ggctactata	tttcccaatc	tattctaaca	360
ctaagaagaa	tctgtcta	taattgtgac	aacatctgca	aaaccatagt	tacctatctt	420
ttcttccaac	tcttttactg	aagacagagg	atcatttttt	acagaagggtg	attttgctaa	480
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gaattcattt	tccataatga	actggccatc	ntgttaagca	taanaaaatc	actatcaaag	600
anaattccta	cagaaaccaa	tttggtcaca	gaatttcctt	tggttanacca	gaaaattaat	660
actgaactta	ctatgcatat	ggcattttact	attaaaaaaa	aaaaagtant	aaccaaggcc	720
aaganaaaca	acctgaaaac	ttaaatacat	ntttataagg	aaaaantaaa	tgaattttta	780
tcttaatttt	aaanaaaaac	cnaaaatttt	nncatacccc	cccgtcttta	cttaaaaant	840
gncttaccaa	aataactaanc	ctttccccc	aacc			874

&lt;210&gt; 281

&lt;211&gt; 730

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 281

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ccatcttctc	taacctccgn	cccangatct	tcagggtcca	caccactgtg	cgtggaaatc	660
cacaaccact	ggtgtctcct	gtttgaacac	tccgtcttga	aantcngtcc	ntcctgnata	720
ttaaagggtg						730

&lt;210&gt; 282

&lt;211&gt; 699

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 282

agaactcaga	gctgctcttc	ctctgtggcc	agttggggac	cagcatcatg	aagtggatgg	60
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taacctgggt	ctgtcccgtt	ggattaaggc	caccacaagc	tatntagggc	nattnggntc	660
aaggatgggt	gtcnctttat	nnagcccccg	tncttttcaa			699

&lt;210&gt; 283

&lt;211&gt; 759

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 283

gaaattgaga	actgatttaa	tactaaagtt	ctgaataaag	gtgtgcactt	tatgattgat	60
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catgttacat	tactggctcc	accattttgt	aatatgttgc	acaagtttta	gtccttgctc	720
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&lt;210&gt; 284

&lt;211&gt; 764

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 284

ggaccgcgat	gacgcagact	ggagggaggt	gatgatgccc	tattcgacag	aactgatatt	60
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gggatatttc	aagggaggag	gtaaatgaca	aattgcggga	tatgccagat	gggaccttct	240
tggtcggaga	tgcttcaaca	aaaatgcagg	gagattatac	tttgactttg	cggaaggagg	300
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tgacatttaa	ttccgtgggtg	gagctcatta	accactatca	ccatgaatct	cttgctcagt	420
acaatcccaa	acttgatgtg	aagctgatgt	acccaagtgt	ccagatacca	acaggatcag	480
ttggtaaaaag	aagataatat	tgatgcagta	ngtaaaaaaac	tgcaagaata	ccactctcaa	540
gtatcaggag	aagagtaaag	gagtatgata	ngctgtatga	agaatatact	agaacatccc	600
aaggaaatac	agatgaagag	gactgcaata	gaaagctttt	aatgaaaaca	ttaaaatatt	660
tggaaagaca	ntgtcacaca	caaggaaacca	acattnccaa	agaatatatt	gagnngattt	720
cncaaaaanaa	ggggaaatga	aaagggggan	ttgaacgaaa	ttta		764

&lt;210&gt; 285

&lt;211&gt; 586

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

<400> 285  
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tcttttaggct aaggaaacac catacaagca ccaacttcat tttangattc aaagctcacc 120  
atccccacaa aaagaatgct attccncatc tcagagaaac aggaggaag gacanaaggg 180  
gttagttaca gtgatcaatt ttagcgtttg ctaaaacnca caaattcnag nctttttaag 240  
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gctggtgaaa tgctgaancc taaattatgt tggnaagaaa caaagtacct tcanttgaag 420  
gtttttttta acanctnggc ttaaattatt taaatgaaan cccaagcctc ccnatttncc 480  
tttggtngcc ttttncanaa aatcccattc natcacaaaa ccctaaaaag ccttcttcgt 540  
nggggggaaa aaananactg ccaaangcaa aaacaaaaac ncccaa 586

<210> 286

<211> 666

<212> DNA

<213> Homo Sapiens

<400> 286  
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ggacggaaaa gaaaagttga ttacaaacgg gaccatattt tgcttcgaaa tggaccagc 120  
agttagcgag ccaatgagag accaagtcgc acggactcat ttgacagagg aactcccaa 180  
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cctctgcagc cgacaggatc tgtaccagc tctgaaaggt gtaaacacag ttttccactg 420  
tgcgtcaccc ccaccatcca gtaacaacaa ggagctcttt tatagaagtg aattacattg 480  
gcaccaagaa tgtcattgaa acttgcaag aggctggggg tcagaaactc attttaacca 540  
gcagtgccat gtcattcttg agggcgctga tatcaagaat ggaactgaaa gaccttccct 600  
nagccattga aaccaattga cctactacac aaganactaa agatcttaca ngagaaggca 660  
atttct 666

<210> 287

<211> 782

<212> DNA

<213> Homo Sapiens

<400> 287  
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catgaaggaa gaaatgtctg tttttgccc cctcatcgtc acggaaagag taggggtgcgc 120  
tctctgccta gcagaaggag tcacaggctc agagcaaaact cattcaaagg atgttatttc 180  
atcaatccac aggggaagga gtgactggct gagcaacgtg tcgagagagc ccagcctcca 240  
gtgtccctca cttgaccctc cgcagggtgc gaaagctctg cacggctctc tccatagcat 300  
catccatggg cactagtggc tggtagccca tggccttttt ggctctctcg cagctgtagt 360  
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gaaagtccac caagtccctc ccaatttcca atcacgaaac ttcaaccttg ccgttccctg 720  
ctgcctccat gaaggatggg ttacaaactg ccgggttccc tttggggccg aaaaattgcc 780  
aa 782

<210> 288

<211> 707

<212> DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 288

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accaagtaga	atatgctttt	aaggctatta	accagggttg	ccttacatca	gtagctgtca	120
gagggaaaga	ctgtgcagta	attgtcacac	agaagaaagt	acctgacaaa	ttattggatt	180
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acaagtatgg	ctatgagatt	cctgtggaca	tgctgtgtaa	aagaattgcc	gatatttctc	360
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ttaaagccac	tgacagcgga	gttaaacaaa	ctgagtcaac	cagcttcctt	gaaaaaaaaa	540
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ctactgttcc	atcaattgan	ttcaaaccct	cagaaataga	aattgggagt	aatgacagtt	660
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## &lt;210&gt; 289

## &lt;211&gt; 673

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 289

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acttccccnn	atttttgact	atgatggcta	gaaaaatgaa	agatacagat	agtgaagaag	180
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gtcgttttta	aaacgtcntg	acgggggaaa	accctggngt	taccaactta	atcccccttg	660
caacaaatnc	ccc					673

## &lt;210&gt; 290

## &lt;211&gt; 573

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 290

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ccatcaatat	ctgcttcnct	gatcatttca	tctacttctt	catctgttag	tttttcnccn	180
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ngagggttaa	atttcgaact	ttggnttttt	tcc			573

## &lt;210&gt; 291

## &lt;211&gt; 819

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 291

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ggttgctgan	gtaaaccctg	aanacggggc	tggtnnaggg	cgccctcctg	cacatgccct	720
gcatactgtg	gtggcctcat	ccacggncna	aaccanggta	aggcaaggcc	catgatgcca	780
tcaaactgcc	ataacaaatt	tgtacaaggc	tcaatccca			819

## &lt;210&gt; 292

## &lt;211&gt; 664

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 292

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tccaagatct	gtgccaatgt	gttttgtgga	gccggccggg	aatgtgcagt	cacagagaaa	120
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## &lt;210&gt; 293

## &lt;211&gt; 719

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 293

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 <212> DNA  
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 <212> DNA  
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<400> 295  
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 <212> DNA  
 <213> Homo Sapiens

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652

&lt;210&gt; 297

&lt;211&gt; 879

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 297

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aacagaaaact tgtaggatt gtttcttgaa gtttgactac ttaaaaacat aggtgtaaag	180
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acataaaaaan gcttgaaatg gctaaaaaca agngnggaa	879

&lt;210&gt; 298

&lt;211&gt; 697

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 298

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aaggacatag ctttggaacc taaggaacaa aaacatgaag acaggcagag caatacacct	180
tctcctcctg ttagtacctt ttcacacagg acttctacca ccagtgatat tgaagtttta	240
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aattcaagat gatgaattgt caggcaaggg gatatgcttt agtgcctatt ataagttaat	540
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caactccccg gttaacngng aaaangcctg gatatcc	697

&lt;210&gt; 299

&lt;211&gt; 510

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 299

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gtgtnactcc tactttttaa ggaaaaaaat tanttttaaa ttaatancc cccgatttaa	360

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 <212> DNA  
 <213> Homo Sapiens

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ggaagaaagt	ggacgaagt	caactcctgt	taactgtgaa	cagcctgata	tcttggttct	240
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taatttttta	ctttaacact	taatgtacat	tttcatganc	agtaattaaa	atatnttgaa	420
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<210> 302  
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 <212> DNA  
 <213> Homo Sapiens

<400> 302						
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tacataaggg	taaaacaa					738

&lt;210&gt; 303

&lt;211&gt; 635

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 303

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caagaaactt	cctgaaacaa	ctgaaatcac	aaagt			635

&lt;210&gt; 304

&lt;211&gt; 847

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 304

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&lt;210&gt; 305

&lt;211&gt; 767

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 305

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&lt;210&gt; 306

&lt;211&gt; 1659

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 306

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&lt;210&gt; 307

&lt;211&gt; 831

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 307

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&lt;210&gt; 308

&lt;211&gt; 833

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 308

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&lt;211&gt; 1320

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 309

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&lt;210&gt; 310

&lt;211&gt; 1030

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 310

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&lt;210&gt; 311

&lt;211&gt; 546

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 311

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&lt;211&gt; 518

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;210&gt; 316

&lt;211&gt; 843

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 316

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&lt;210&gt; 317

&lt;211&gt; 835

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 317

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&lt;210&gt; 318

&lt;211&gt; 582

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 318

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 319

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 320

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&lt;210&gt; 321

&lt;211&gt; 808

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 321

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&lt;210&gt; 322

&lt;211&gt; 629

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 322

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&lt;210&gt; 323

&lt;211&gt; 798

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 323

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798

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&lt;210&gt; 327

&lt;211&gt; 852

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 327

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&lt;210&gt; 328

&lt;211&gt; 799

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 328

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&lt;210&gt; 329

&lt;211&gt; 978

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 329

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&lt;210&gt; 330

&lt;211&gt; 1017

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 330

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&lt;210&gt; 331

&lt;211&gt; 799

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 331

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&lt;210&gt; 332

&lt;211&gt; 881

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 332

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&lt;210&gt; 333

&lt;211&gt; 810

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 333

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 <212> DNA  
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&lt;210&gt; 337

&lt;211&gt; 643

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 337

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ctctcttgac	tatgagtaaa	ggagaaaagg	ctngactgga	aaatggaccc	aaaatggcct	600
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&lt;210&gt; 338

&lt;211&gt; 831

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 338

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&lt;210&gt; 339

&lt;211&gt; 758

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 339

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&lt;210&gt; 340

&lt;211&gt; 840

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 340

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&lt;210&gt; 341

&lt;211&gt; 793

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 341

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gncccnctt	gga					793

&lt;210&gt; 342

&lt;211&gt; 906

&lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 342

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## &lt;210&gt; 343

## &lt;211&gt; 875

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 343

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## &lt;210&gt; 344

## &lt;211&gt; 629

## &lt;212&gt; DNA

## &lt;213&gt; Homo Sapiens

## &lt;400&gt; 344

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acctggcact	caatccactc	ggcacctggc	tgtctgtcgc	gtcctggggc	tggaaaggac	240
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gccgacacac	agcgaactac	atacttttag	aaagagcctc	tgtcacatgg	ctagaacaac	360
aacaacaaca	aagaaaaccc	acaaaaaac	tggagaaaat	atatctaaat	ctctgatagg	420

tctcttagct	agcagtgagt	tcagtatgac	agcacagagt	ctaaaaatat	taattaaaaa	480
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&lt;210&gt; 345

&lt;211&gt; 724

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 345

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&lt;210&gt; 346

&lt;211&gt; 907

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 346

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&lt;210&gt; 347

&lt;211&gt; 711

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 347

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&lt;210&gt; 348

&lt;211&gt; 862

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 348

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&lt;210&gt; 349

&lt;211&gt; 832

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 349

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 <211> 782  
 <212> DNA  
 <213> Homo Sapiens

<400> 350  
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 cngatnccaa aaccnaaata agtaaaaaan ccanggggaa ncengancat tcnacctnng 240  
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&lt;210&gt; 353

&lt;211&gt; 875

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 353

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&lt;210&gt; 354

&lt;211&gt; 705

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 354

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&lt;210&gt; 355

&lt;211&gt; 862

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 355

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&lt;210&gt; 356

&lt;211&gt; 750

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 356

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&lt;210&gt; 357

&lt;211&gt; 725

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 357

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 <213> Homo Sapiens

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&lt;210&gt; 361

&lt;211&gt; 726

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 361

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&lt;210&gt; 362

&lt;211&gt; 747

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 362

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&lt;210&gt; 363

&lt;211&gt; 1227

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 363

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&lt;210&gt; 364

&lt;211&gt; 831

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 364

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&lt;211&gt; 785

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 365

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&lt;211&gt; 826

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 369

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&lt;210&gt; 370

&lt;211&gt; 783

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 370

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&lt;210&gt; 374

&lt;211&gt; 745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 374

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&lt;210&gt; 375

&lt;211&gt; 734

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 375

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&lt;210&gt; 376

&lt;211&gt; 822

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 376

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&lt;210&gt; 377

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 377

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&lt;210&gt; 378

&lt;211&gt; 870

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 378

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870

&lt;210&gt; 379

&lt;211&gt; 837

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 379

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&lt;211&gt; 793

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 380

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 381

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&lt;210&gt; 382

&lt;211&gt; 800

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 382

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 383

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&lt;211&gt; 2651

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 384

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&lt;210&gt; 388

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 388

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&lt;210&gt; 389

&lt;211&gt; 737

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;400&gt; 390

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&lt;210&gt; 391

&lt;211&gt; 776

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 391

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&lt;210&gt; 392

&lt;211&gt; 909

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 392

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909

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 <212> DNA  
 <213> Homo Sapiens

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 <212> DNA  
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&lt;210&gt; 396

&lt;211&gt; 822

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 396

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&lt;210&gt; 397

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 397

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&lt;210&gt; 398

&lt;211&gt; 751

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens



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<211> 800

<212> DNA

<213> Homo Sapiens

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<211> 810

<212> DNA

<213> Homo Sapiens

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<211> 860

<212> DNA

<213> Homo Sapiens

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<211> 779

<212> DNA

<213> Homo Sapiens

<400> 402

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<212> DNA

<213> Homo Sapiens

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&lt;210&gt; 404

&lt;211&gt; 819

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 404

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&lt;210&gt; 405

&lt;211&gt; 761

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 405

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&lt;210&gt; 406

&lt;211&gt; 758

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 406

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&lt;210&gt; 407

&lt;211&gt; 778

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 407

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&lt;210&gt; 408

&lt;211&gt; 752

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 408

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&lt;210&gt; 409

&lt;211&gt; 736

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 409

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&lt;210&gt; 410

&lt;211&gt; 766

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 410

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&lt;210&gt; 411

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 411

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&lt;210&gt; 412

&lt;211&gt; 857

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 412

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&lt;210&gt; 413

&lt;211&gt; 790

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 413

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&lt;210&gt; 414

&lt;211&gt; 1063

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 414

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&lt;210&gt; 415

&lt;211&gt; 824

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 415

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&lt;210&gt; 416

&lt;211&gt; 838

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 416

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&lt;210&gt; 417

&lt;211&gt; 880

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 417

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&lt;210&gt; 418

&lt;211&gt; 763

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 418

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&lt;210&gt; 419

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 419

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&lt;210&gt; 420

&lt;211&gt; 799

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 420

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&lt;210&gt; 421

&lt;211&gt; 770

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 421

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&lt;210&gt; 422

&lt;211&gt; 733

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 422

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&lt;210&gt; 423

&lt;211&gt; 862

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 423

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&lt;210&gt; 424

&lt;211&gt; 859

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 424

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&lt;210&gt; 425

&lt;211&gt; 837

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 425

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&lt;210&gt; 426

&lt;211&gt; 724

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 426

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catc		724

&lt;210&gt; 427

&lt;211&gt; 981

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 427

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&lt;210&gt; 428

&lt;211&gt; 655

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 428

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&lt;210&gt; 429

&lt;211&gt; 788

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 429

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tcccagca						788

&lt;210&gt; 430

&lt;211&gt; 655

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 430

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&lt;210&gt; 431

&lt;211&gt; 844

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 431

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gaaa						844

&lt;210&gt; 432

&lt;211&gt; 807

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 432

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&lt;210&gt; 433

&lt;211&gt; 866

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 433

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&lt;210&gt; 434

&lt;211&gt; 764

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 434

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&lt;210&gt; 435

&lt;211&gt; 834

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 435

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&lt;210&gt; 436

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 436

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&lt;210&gt; 437

&lt;211&gt; 842

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 437

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&lt;210&gt; 438

&lt;211&gt; 678

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 438

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&lt;211&gt; 826

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 439

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&lt;211&gt; 875

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 443

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&lt;211&gt; 756

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 444

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&lt;210&gt; 445

&lt;211&gt; 783

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 445

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&lt;210&gt; 446

&lt;211&gt; 866

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 446

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aagtgttgag	ttcacattta	atgggtacctg	tagaaacagn	cctttatttg	gacaccttta	780
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ctaatacctg	gccagtttnc	aaaagc				866

&lt;210&gt; 447

&lt;211&gt; 789

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 447

gtcacgttg	aatgcaaatt	gagcacatca	ttgaaaacat	tgttgctgtc	accaaaggac	60
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agcagtgaag	gaaaaaagtc	cttcgctggg	gaaaaaagat	gccgaagaca	gacttcaaaa	720
aagccagang	ccaggttttc	ccactcctag	taaatactgtg	agaaagcttt	ccacaccccc	780

aaaaaatgg

789

&lt;210&gt; 448

&lt;211&gt; 820

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 448

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&lt;210&gt; 449

&lt;211&gt; 936

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 449

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&lt;210&gt; 450

&lt;211&gt; 806

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 450

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&lt;210&gt; 451

&lt;211&gt; 909

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 451

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agaacttcc						909

&lt;210&gt; 452

&lt;211&gt; 672

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 452

actgaaaaaa	agtgaanttt	naattatntt	gtnaatnnac	tnaaaaaacc	ncacncaagc	60
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gactttaatn	ncatgattta	naanatncag	nacgntattg	cctaaatntt	attctataca	540
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&lt;210&gt; 453

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 <212> DNA  
 <213> Homo Sapiens

<400> 453  
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 agggctgcac ggccgtgtac cgaggcgtg acggcatgaa gaagcacatc aaggagcacc 180  
 acgaggaggt ccgggagcgg ccctgcccc accctggctg caacaagggt ttcgatgctg 240  
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 cccctctgtg accacagacg gccaggcggg gaagcccga cccacctgag gacggcagtg 660  
 aggatgagca cctctagcag cctggacttc gcagtggctg tgtcaagcct cacccttcgt 720  
 gtgcaccgcg atgggagggg cggagggttg cttgccgncc ttggtgctgg angcgggctt 780  
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<210> 454  
 <211> 703  
 <212> DNA  
 <213> Homo Sapiens

<400> 454  
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 cccaagtac tcagcgtttg cgggaaaata aacctctggg ccagagcag aggaaggcta 180  
 cttgagccgg acaccaagcc cgctccagc accaagggcg ggcagcacc tccgaccctc 240  
 ccatgcgggt gcacacgaag ggtgaggctg acacagccac tgcggagtcc aggctgctan 300  
 aggtgctcat cctcactgcc gtctcaggt ggggttcggc ttcaccgcct ggccgtctgt 360  
 ggtcacagag gggctcgggt gccaggtgg tgggttcggc tccaggggca gggccttgtc 420  
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 aaaccgccgg ccacactggg cacaggcaaa gtccagctca gtctcagcct tnggtttggt 540  
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 gnttgccca attnggtaca agatatagtt cccaccttt ggg 703

<210> 455  
 <211> 825  
 <212> DNA  
 <213> Homo Sapiens

<400> 455  
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 ggaaggagca tgctctctgt gggcagactg gtgtggagaa catgcagaac acacaggcca 540  
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ctgcagatgc	aaaccaggca	gaaggccatg	aatcgaattt	cattgcccag	ttggccttcc	660
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gaacgttnca	tgggtgatca	caattgaacg	tgtgcacaag	aagctganga	cttgtggaat	780
ccggacaggc	attgccaacc	agggggccagc	ttaacaagcc	ccagg		825

<210> 456  
 <211> 740  
 <212> DNA  
 <213> Homo Sapiens

<400> 456						
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acaacaggga	ccatggcact	gaatgaaata	aaggggcaat	caccttccca	tcattgcata	540
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ccaagggatc	gtttttatng	atgacctggg	cacctataat	gnccagttgc	tttatgagaa	660
ccacacacac	accacattct	tcctaccctn	taagagaagg	taggttcctt	tcacaataag	720
gaaaaccccc	ccttatactt					740

<210> 457  
 <211> 726  
 <212> DNA  
 <213> Homo Sapiens

<400> 457						
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ccgcaa						726

<210> 458  
 <211> 870  
 <212> DNA  
 <213> Homo Sapiens

<400> 458						
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&lt;210&gt; 459

&lt;211&gt; 761

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 459

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&lt;210&gt; 460

&lt;211&gt; 876

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 460

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&lt;210&gt; 461



&lt;211&gt; 689

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 461

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 462

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&lt;211&gt; 784

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 463

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&lt;210&gt; 467

&lt;211&gt; 885

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 467

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&lt;210&gt; 468

&lt;211&gt; 748

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 468

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&lt;210&gt; 469

&lt;211&gt; 770

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 469

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&lt;211&gt; 892

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 470

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 471

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&lt;210&gt; 472

&lt;211&gt; 852

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 472

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 819

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 474

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&lt;210&gt; 475

&lt;211&gt; 721

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 475

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&lt;210&gt; 476

&lt;211&gt; 442

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 476

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<210> 477

<211> 878

<212> DNA

<213> Homo Sapiens

<400> 477

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<210> 478

<211> 768

<212> DNA

<213> Homo Sapiens

<400> 478

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<210> 479

<211> 815

<212> DNA

<213> Homo Sapiens

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&lt;210&gt; 480

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 480

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&lt;210&gt; 481

&lt;211&gt; 1127

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 481

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<212> DNA  
<213> Homo Sapiens

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&lt;210&gt; 485

&lt;211&gt; 430

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 485

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&lt;210&gt; 486

&lt;211&gt; 831

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 486

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&lt;210&gt; 487

&lt;211&gt; 728

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 487

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&lt;210&gt; 488

&lt;211&gt; 788

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 488

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&lt;210&gt; 489

&lt;211&gt; 875

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 489

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&lt;210&gt; 493

&lt;211&gt; 804

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 493

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&lt;211&gt; 856

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 494

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&lt;210&gt; 495

&lt;211&gt; 757

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 495

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&lt;210&gt; 496

&lt;211&gt; 1759

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 496

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&lt;210&gt; 500

&lt;211&gt; 787

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 500

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&lt;210&gt; 501

&lt;211&gt; 886

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 501

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&lt;210&gt; 502

&lt;211&gt; 626

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 502



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&lt;210&gt; 503

&lt;211&gt; 884

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 503

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 505

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 518

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 519

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&lt;213&gt; Homo Sapiens

&lt;400&gt; 520

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 521

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&lt;213&gt; Homo Sapiens

&lt;400&gt; 522

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&lt;211&gt; 833



&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 526

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 527

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&lt;211&gt; 842

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 529

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 789

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 534

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&lt;211&gt; 802

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 535

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&lt;211&gt; 901

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 536

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&lt;211&gt; 761

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 537

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&lt;210&gt; 538

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 538

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 542

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 852

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens



&lt;400&gt; 544

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852

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&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 545

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Leu Leu Asp Ala Ser Glu Lys Leu Lys Leu Thr Tyr Glu Glu Lys Cys
 1          5          10          15
Glu Ile Glu Glu Ser Gln Leu Lys Phe Leu Arg Asn Asp Leu Ala Glu
          20          25          30
Tyr Gln Arg Thr Cys Glu Asp Leu Lys Glu Gln Leu Lys His Lys Glu
          35          40          45
Phe Leu Leu Ala Ala Asn Thr Cys Asn Arg Val Gly Gly Leu Cys Leu
          50          55          60
Lys Cys Ala Gln His Glu Ala Val Leu Ser Gln Thr His Thr Asn Val
          65          70          75          80
His Met Gln Thr Ile Glu Arg Leu Val Lys Glu Arg Asp Asp Leu Met
          85          90          95
Ser Ala Leu Val Ser Val Arg Ser Ser Leu Ala Asp Thr Gln Gln Arg
          100          105          110
Glu Ala Ser Ala Tyr Glu Gln Val Lys Gln Val Leu Gln Ile Ser Glu
          115          120          125
Glu Ala Asn Phe Glu Lys Thr Lys Ala Leu Ile Gln Cys Asp Gln Leu
          130          135          140
Arg Lys Glu Leu Glu Arg Gln Ala Glu Arg Leu Glu Lys Glu Leu Ala
          145          150          155          160
Ser Gln Gln Glu Lys Arg Ala Ile Glu Lys Asp Met Met Lys Lys Glu
          165          170          175
Ile Thr Lys Glu Arg Glu Tyr Met Gly Ser Lys Met Leu Ile Leu Ser
          180          185          190
Gln Asn Ile Ala Gln Leu Glu Ala Gln Val Glu Lys Val Thr Lys Glu
          195          200          205
Lys Ile Ser Ala Ile Asn Gln Leu Glu Glu Ile Gln Ser Gln Leu Ala
          210          215          220
Ser Arg Glu Met Asp Val Thr Lys Val Cys Gly Glu Met Arg Tyr Gln
          225          230          235          240
Leu Asn Lys Thr Asn Met Glu Lys Asp Glu Ala Glu Lys Glu His Arg
          245          250          255

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Glu Phe Arg Ala Lys Thr Asn Arg Asp Leu Glu Ile Lys Asp Gln Glu  
 260 265 270  
 Ile Glu Lys Leu Arg Ile Glu Leu Asp Glu Ser Lys Gln His Leu Glu  
 275 280 285  
 Gln Glu Gln Gln Lys Ala Ala Leu Ala Arg Glu Glu Cys Leu Arg Leu  
 290 295 300  
 Thr Glu Leu Leu Gly Glu Ser Glu His Gln Leu His Leu Thr Arg Ser  
 305 310 315 320  
 Glu Ile Ala Gln Leu Ser Gln Glu Lys Arg Tyr Thr Tyr Asp Lys Leu  
 325 330 335  
 Gly Lys Leu Gln Arg Arg Asn Glu Glu Leu Glu Glu Gln Cys Val Gln  
 340 345 350  
 His Gly Arg Val His Glu Thr Met Lys Gln Arg Leu Arg Gln Leu Asp  
 355 360 365  
 Lys His Ser Gln Ala Thr Ala Gln Gln Leu Val Gln Leu Leu Ser Lys  
 370 375 380  
 Gln Asn Gln Leu Leu Leu Glu Arg Gln Ser Leu Ser Glu Glu Val Asp  
 385 390 395 400  
 Arg Leu Arg Thr Gln Leu Pro Ser Met Pro Gln Ser Asp Cys  
 405 410

<210> 546  
 <211> 2885  
 <212> DNA  
 <213> Homo Sapiens

<400> 546  
 ggaattcctc ttgtcgaagt caaaggagcc cacaccaggc ggccctcaacc attccctccc 60  
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 gagcgcccc cctgggagcg ctcctccta caaactgcct ttgcctgggc cctacgacag 180  
 tcgagacgac ttccccctcc gcaaaacagc ctctgaaccc aacttgaaag tgcgttcaag 240  
 gctaaaacag aaggtggctg agcggagaag cagtcacctc ctgcgtcgca aggatgggac 300  
 tggtattagc acctttaaga agagagctgt tgagatcaca ggtgcccggc ctggggcgctc 360  
 gtccgtgtgt aacagcgac ccggtccgg cccagctct cccaacagct cccacagcac 420  
 catcgctgag aatggcttta ctggctcagt cccaacatc cccactgaga tgctccctca 480  
 gcaccgagcc ctccctctgg acagctcccc caaccagttc agcctctaca cgtctccttc 540  
 tctgcccac atctccctag ggctgcaggc caccggtcact gtcaccaact cacacctcac 600  
 tgctccccc aagctgtcga cacagcagga ggccgagagg caggccctcc agtccctgcg 660  
 gcaggggtgg acgctgaccg gcaagttcat gagcacatcc tctattcctg gctgctgct 720  
 gggcgtggca ctggaggcg acgggagccc ccacgggcat gcctccctgc tgcagcatgt 780  
 gctgttgctg gagcaggccc ggcagcagag caccctcatt gctgtgccac tccacgggca 840  
 gtccccacta gtgacgggtg aacgtgtggc caccagcatg cggacggtag gcaagctccc 900  
 gcggcatcgg cccctgagcc gcactcagtc ctcaccgctg ccgcagagtc cccaggccct 960  
 gcagcagctg gtcattgcaac aacagcacca gcagttcctg gagaagcaga agcagcagca 1020  
 gctacagctg ggcaagatcc tcaccaagac aggggagctg cccaggcagc ccaccacca 1080  
 ccctgaggag acagaggagg agctgacgga gcagcaggag gtcttgctgg gggaggaggc 1140  
 cctgaccatg ccccgaggag gctccacaga gactgagagc acacaggaag acctggagga 1200  
 ggaggacgag gaagaggatg gggaggagga ggaggattgc atccagggtta aggacgagga 1260  
 gggcgagagt ggtgctgagg aggggcccga cttggaggag cctgggtgctg gatacaaaaa 1320  
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 ggccactgtg ccccaaccaag ccctgggccc taccatcc tccctgctg cccctggggg 1440  
 catgaagaac ccccagacc aaccgctcaa gcacctctc accacaagtg tggctacga 1500  
 caggttcatg ctaaagcacc agtgcattgt cgggaacaca cagctgcacc ctgagcatgc 1560  
 tggccgcatc cagagcatct ggtcccggt gcaggagaca ggctgctta gcaagtgcga 1620  
 gcggatccga ggtcgcaaag ccacgctaga tgagatccag acagtgcact ctgaatacca 1680

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caccctgctc tatgggacca gtccctctcaa ccggcagaag ctagacagca agaagttgct 1740
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tgacaccgtg tggaatgaga tgcactcctc cagtgcgtgt cgcattggcag tgggctgcct 1860
gctggagctg gccttcaagg tggctgcagg agagctcaag aatggatttg ccatcatccg 1920
gccccagga caccacgccg aggaatccac agccatggga ttctgcttct tcaactctgt 1980
agccatcacc gcaaaactcc tacagcagaa gttgaacgtg ggcaaggtcc tcatcgtgga 2040
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ctacatctct ctgcatcgct atgacaacgg gaacttcttt ccaggctctg gggctcctga 2160
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gcccttggat gaggcagtct tgcagcaaaa gcccaacatc aacgcagtgg ccacgctaga 2580
gaaagtcatc gagatccaga gcaaacactg gagctgtgtg cagaagttcg ccgctggtct 2640
gggccgggtc ctgcgagggg cccaagcagg tgagaccgaa gaagccgaaa tgtgaacgcc 2700
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cccaggcccg cagaggagcc catggagcag gagcctgccc tgtgacgcc cggcccccat 2820
ccctttgggc ttcaccattg tgattttgtt tattttttct attaaaaaca aaaagttaaa 2880
aattt

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&lt;210&gt; 547

&lt;211&gt; 897

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 547

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Glu Phe Leu Leu Ser Lys Ser Lys Glu Pro Thr Pro Gly Gly Leu Asn
 1           5           10           15
His Ser Leu Pro Gln His Pro Lys Cys Trp Gly Ala His His Ala Ser
          20           25           30
Leu Asp Gln Ser Ser Pro Pro Gln Ser Gly Pro Pro Gly Thr Pro Pro
          35           40           45
Ser Tyr Lys Leu Pro Leu Pro Gly Pro Tyr Asp Ser Arg Asp Asp Phe
          50           55           60
Pro Leu Arg Lys Thr Ala Ser Glu Pro Asn Leu Lys Val Arg Ser Arg
65           70           75           80
Leu Lys Gln Lys Val Ala Glu Arg Arg Ser Ser Pro Leu Leu Arg Arg
          85           90           95
Lys Asp Gly Thr Val Ile Ser Thr Phe Lys Lys Arg Ala Val Glu Ile
          100          105          110
Thr Gly Ala Gly Pro Gly Ala Ser Ser Val Cys Asn Ser Ala Pro Gly
          115          120          125
Ser Gly Pro Ser Ser Pro Asn Ser Ser His Ser Thr Ile Ala Glu Asn
          130          135          140
Gly Phe Thr Gly Ser Val Pro Asn Ile Pro Thr Glu Met Leu Pro Gln
145          150          155          160
His Arg Ala Leu Pro Leu Asp Ser Ser Pro Asn Gln Phe Ser Leu Tyr
          165          170          175
Thr Ser Pro Ser Leu Pro Asn Ile Ser Leu Gly Leu Gln Ala Thr Val
          180          185          190
Thr Val Thr Asn Ser His Leu Thr Ala Ser Pro Lys Leu Ser Thr Gln
          195          200          205
Gln Glu Ala Glu Arg Gln Ala Leu Gln Ser Leu Arg Gln Gly Gly Thr

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      210              215              220
Leu Thr Gly Lys Phe Met Ser Thr Ser Ser Ile Pro Gly Cys Leu Leu
225              230              235              240
Gly Val Ala Leu Glu Gly Asp Gly Ser Pro His Gly His Ala Ser Leu
      245              250              255
Leu Gln His Val Leu Leu Leu Glu Gln Ala Arg Gln Gln Ser Thr Leu
      260              265              270
Ile Ala Val Pro Leu His Gly Gln Ser Pro Leu Val Thr Gly Glu Arg
      275              280              285
Val Ala Thr Ser Met Arg Thr Val Gly Lys Leu Pro Arg His Arg Pro
      290              295              300
Leu Ser Arg Thr Gln Ser Ser Pro Leu Pro Gln Ser Pro Gln Ala Leu
305              310              315              320
Gln Gln Leu Val Met Gln Gln Gln His Gln Gln Phe Leu Glu Lys Gln
      325              330              335
Lys Gln Gln Gln Leu Gln Leu Gly Lys Ile Leu Thr Lys Thr Gly Glu
      340              345              350
Leu Pro Arg Gln Pro Thr Thr His Pro Glu Glu Thr Glu Glu Leu
      355              360              365
Thr Glu Gln Gln Glu Val Leu Leu Gly Glu Gly Ala Leu Thr Met Pro
      370              375              380
Arg Glu Gly Ser Thr Glu Ser Glu Ser Thr Gln Glu Asp Leu Glu Glu
385              390              395              400
Glu Asp Glu Glu Glu Asp Gly Glu Glu Glu Glu Asp Cys Ile Gln Val
      405              410              415
Lys Asp Glu Glu Gly Glu Ser Gly Ala Glu Glu Gly Pro Asp Leu Glu
      420              425              430
Glu Pro Gly Ala Gly Tyr Lys Lys Leu Phe Ser Asp Ala Gln Pro Leu
      435              440              445
Gln Pro Leu Gln Val Tyr Gln Ala Pro Leu Ser Leu Ala Thr Val Pro
      450              455              460
His Gln Ala Leu Gly Arg Thr Gln Ser Ser Pro Ala Ala Pro Gly Gly
465              470              475              480
Met Lys Asn Pro Pro Asp Gln Pro Val Lys His Leu Phe Thr Thr Ser
      485              490              495
Val Val Tyr Asp Thr Phe Met Leu Lys His Gln Cys Met Cys Gly Asn
      500              505              510
Thr His Val His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser
      515              520              525
Arg Leu Gln Glu Thr Gly Leu Leu Ser Lys Cys Glu Arg Ile Arg Gly
      530              535              540
Arg Lys Ala Thr Leu Asp Glu Ile Gln Thr Val His Ser Glu Tyr His
545              550              555              560
Thr Leu Leu Tyr Gly Thr Ser Pro Leu Asn Arg Gln Lys Leu Asp Ser
      565              570              575
Lys Lys Leu Leu Gly Pro Ile Ser Gln Lys Met Tyr Ala Val Leu Pro
      580              585              590
Cys Gly Gly Ile Gly Val Asp Ser Asp Thr Val Trp Asn Glu Met His
      595              600              605
Ser Ser Ser Ala Val Arg Met Ala Val Gly Cys Leu Leu Glu Leu Ala
      610              615              620
Phe Lys Val Ala Ala Gly Glu Leu Lys Asn Gly Phe Ala Ile Ile Arg
625              630              635              640
Pro Pro Gly His His Ala Glu Glu Ser Thr Ala Met Gly Phe Cys Phe
      645              650              655

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Phe Asn Ser Val Ala Ile Thr Ala Lys Leu Leu Gln Gln Lys Leu Asn  
 660 665 670  
 Val Gly Lys Val Leu Ile Val Asp Trp Asp Ile His His Gly Asn Gly  
 675 680 685  
 Thr Gln Gln Ala Phe Tyr Asn Asp Pro Ser Val Leu Tyr Ile Ser Leu  
 690 695 700  
 His Arg Tyr Asp Asn Gly Asn Phe Phe Pro Gly Ser Gly Ala Pro Glu  
 705 710 715 720  
 Glu Val Gly Gly Gly Pro Gly Val Gly Tyr Asn Val Asn Val Ala Trp  
 725 730 735  
 Thr Gly Gly Val Asp Pro Pro Ile Gly Asp Val Glu Tyr Leu Thr Ala  
 740 745 750  
 Phe Arg Thr Val Val Met Pro Ile Ala His Glu Phe Ser Pro Asp Val  
 755 760 765  
 Val Leu Val Ser Ala Gly Phe Asp Ala Val Glu Gly His Leu Ser Pro  
 770 775 780  
 Leu Gly Gly Tyr Ser Val Thr Ala Arg Cys Phe Gly His Leu Thr Arg  
 785 790 795 800  
 Gln Leu Met Thr Leu Ala Gly Gly Arg Val Val Leu Ala Leu Glu Gly  
 805 810 815  
 Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ser  
 820 825 830  
 Ala Leu Leu Ser Val Lys Leu Gln Pro Leu Asp Glu Ala Val Leu Gln  
 835 840 845  
 Gln Lys Pro Asn Ile Asn Ala Val Ala Thr Leu Glu Lys Val Ile Glu  
 850 855 860  
 Ile Gln Ser Lys His Trp Ser Cys Val Gln Lys Phe Ala Ala Gly Leu  
 865 870 875 880  
 Gly Arg Ser Leu Arg Gly Ala Gln Ala Gly Glu Thr Glu Glu Ala Glu  
 885 890 895  
 Met

<210> 548  
 <211> 1298  
 <212> DNA  
 <213> Homo Sapiens

<400> 548  
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 agaactagcg gatttgccaa aagactacct cttgagtgcg agtgaagatg agggggacaa 120  
 tgatggagag agaaagcatc naaagcttct ggaagcaatc agttcccttg atggaaagaa 180  
 taggcggaaa ttggctgana ggtctgaggc tagtctgaag gtgtcagagt tcaatgtcag 240  
 ttctgaagga tcaggagaaa agctggctct tgcagatctg cttgagcctg ttaaaacttc 300  
 atcttctttg gccactgtga aaaagcaact gagtagagtc anatcaaaga anacagtgga 360  
 gttacctctg aacaaagaag agattgaacg gatccacaga gaatagcatt caataaaacg 420  
 cacaagtcct ctccaaatgg gacctgtcgc tctgaagaa ccggcaggca gagcagctgg 480  
 tttttcccct ggagaaagag gagccagcca ttgctcccat tgaacatgtg ctcaagtggct 540  
 ggaaggcaag aactcccctg gagcaggaaa ttttcaacct cctccataag aacaagcagc 600  
 cagtgcacaga ccctttactg acccctgtgg aaaaggcctc tctccgagcc atgagcctag 660  
 aagaggcaaa gatgcgacga gcagagcttc agagggtctg ggctctgcag tcctactatg 720  
 angccaaggc tcgaagagag aagaaaatcn aaagttaaaa gtatcacaaa gtcgtgaaga 780  
 aaggaaaggc caagaaagcc ctaaaagagt ttgagcagct gcggaagggt aatccagctg 840  
 ccgcactaga agaacgaaga aaagaggaaa gaaggaggag gagaaagaag aagaacaagg 900  
 agaagaagaa agaagaaggg agaaggagaa gaaaagaagg agaagaggaa aaggaagaag 960

gagaaagaaa aggagaagga aaaggaaaag aaggagaaga aagaagaact aagaagaagg 1020  
 agaggaagaa taagaaggaa agaagaaaga aaaaagttaa agaagaagaa agaaggaaga 1080  
 aggaaagaag aggaagaact nagaagaaga aagaggagga aagaagaaag aagaataagg 1140  
 aacnagaaag aaggagaaga aagaataaga agaggaagaa gaaaaagaag aaaagaagaa 1200  
 ggaaagaagg agaaaaagga agaaaaaagg aagaagaaag tagaaagcgg aagaagaaa 1260  
 agaaagtata agaaggaaga agaagaaaga aggaaaaa 1298

<210> 549  
 <211> 236  
 <212> PRT  
 <213> Homo Sapiens

<400> 549  
 Ala Ala Glu Met Thr Ala Asn Arg Leu Ala Glu Ser Leu Leu Ala Leu  
 1 5 10 15  
 Ser Gln Glu Glu Leu Ala Asp Leu Pro Lys Asp Tyr Leu Leu Ser Glu  
 20 25 30  
 Ser Glu Asp Glu Gly Asp Asn Asp Gly Glu Arg Lys His Lys Leu Leu  
 35 40 45  
 Glu Ala Ile Ser Ser Leu Asp Gly Lys Asn Arg Arg Lys Leu Ala Arg  
 50 55 60  
 Ser Glu Ala Ser Leu Lys Val Ser Glu Phe Asn Val Ser Ser Glu Gly  
 65 70 75 80  
 Ser Gly Glu Lys Leu Val Leu Ala Asp Leu Leu Glu Pro Val Lys Thr  
 85 90 95  
 Ser Ser Ser Leu Ala Thr Val Lys Lys Gln Leu Ser Arg Val Ser Lys  
 100 105 110  
 Thr Val Glu Leu Pro Leu Asn Lys Glu Glu Ile Glu Arg Ile His Arg  
 115 120 125  
 Glu Ile Ala Phe Asn Lys Thr His Lys Ser Ser Pro Asn Gly Thr Leu  
 130 135 140  
 Ser Ser Val Leu Lys Asn Arg Gln Ala Glu Gln Leu Val Phe Pro Leu  
 145 150 155 160  
 Glu Lys Glu Glu Pro Ala Ile Ala Pro Ile Glu His Val Leu Ser Gly  
 165 170 175  
 Trp Lys Ala Arg Thr Pro Leu Glu Gln Glu Ile Phe Asn Leu Leu His  
 180 185 190  
 Lys Asn Lys Gln Pro Val Thr Asp Pro Leu Leu Thr Pro Val Glu Lys  
 195 200 205  
 Ala Ser Leu Arg Ala Met Ser Leu Glu Glu Ala Lys Met Arg Arg Ala  
 210 215 220  
 Glu Leu Gln Arg Ala Arg Ala Leu Gln Ser Tyr Tyr  
 225 230 235

<210> 550  
 <211> 2236  
 <212> DNA  
 <213> Homo Sapiens

<400> 550  
 cctggccccg tgcgggtcgc ggctctttcc agctcctggc agccgggcac ccgaaggaac 60  
 gggctcgtgca acgacgcagc tggacctggc ccagccatgg accgaaaagt ggccccgagaa 120  
 ttccggcata aggtggattt tctgattgaa aatgatgcag agaaggacta tctctatgat 180  
 gtgctgcgaa tgtaccacca gaccatggac gtggccgtgc tctggggaga cctgaagctg 240  
 gtcacatg aaccagccg tctgcctctg tttgatgcca ttcggccgct gatccactg 300

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aagcaccagg tggaaatatga tcagctgacc ccccggcgct ccaggaagct gaaggagggtg 360
cgtctggacc gtctgcaccc cgaaggcctc ggcctgagtg tgcgtggtgg cctggagttt 420
ggctgtgggc tcttcatctc ccacctcatc aaaggcggtc aggagacag cgtcgggctc 480
caggtagggg acgagatcgt ccggatcaat ggatattcca tctcctcctg taccatgag 540
gaggtcatca acctcattcg aaccaagaaa actgtgtcca tcaaagttag acacatcggc 600
ctgatccccg tgaagagctc tctgatgag cccctcactt ggcagtatgt ggatcagttt 660
gtgtcggaat ctggggggcg gcgaggcagc ctgggctccc ctggaaatcg ggaaaacaag 720
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ggccccatcc agaagcctgg catctttatc agccatgtga aacctggctc cctgtctgct 840
gaggtgggat tggagatagg ggaccagatt gtcgaagtca atggcgctga cttctctaac 900
ctggatcaca aggaggtgt aaatgtgctg aaaaatagcc gcagcctgac catctccatt 960
gtagctgcag ctggccggga gctgttcatg acagaccggg agcggctggc agaggcgagg 1020
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taagaccca ctggagtctc tctctctcca tccctctct ctgcccctct ctctaattgc 2160
tgccaggatt gtcactccaa accttactct gagctcatta ataaaataaa cagatttatt 2220
ttccagctta aaaaaa 2236

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&lt;210&gt; 551

&lt;211&gt; 652

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 551

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Met Asp Arg Lys Val Ala Arg Glu Phe Arg His Lys Val Asp Phe Leu
1           5           10          15
Ile Glu Asn Asp Ala Glu Lys Asp Tyr Leu Tyr Asp Val Leu Arg Met
20          25          30
Tyr His Gln Thr Met Asp Val Ala Val Leu Val Gly Asp Leu Lys Leu
35          40          45
Val Ile Asn Glu Pro Ser Arg Leu Pro Leu Phe Asp Ala Ile Arg Pro
50          55          60
Leu Ile Pro Leu Lys His Gln Val Glu Tyr Asp Gln Leu Thr Pro Arg
65          70          75          80
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
85          90          95
Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu
100         105         110
Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu

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      115              120              125
Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser
      130              135              140
Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val
145              150              155              160
Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro
      165              170              175
Asp Glu Pro Leu Thr Trp Gln Tyr Val Asp Gln Phe Val Ser Glu Ser
      180              185              190
Gly Gly Val Arg Gly Ser Leu Gly Ser Pro Gly Asn Arg Glu Asn Lys
      195              200              205
Glu Lys Lys Val Phe Ile Ser Leu Val Gly Ser Arg Gly Leu Gly Cys
      210              215              220
Ser Ile Ser Ser Gly Pro Ile Gln Lys Pro Gly Ile Phe Ile Ser His
225              230              235              240
Val Lys Pro Gly Ser Leu Ser Ala Glu Val Gly Leu Glu Ile Gly Asp
      245              250              255
Gln Ile Val Glu Val Asn Gly Val Asp Phe Ser Asn Leu Asp His Lys
      260              265              270
Glu Ala Val Asn Val Leu Lys Asn Ser Arg Ser Leu Thr Ile Ser Ile
      275              280              285
Val Ala Ala Ala Gly Arg Glu Leu Phe Met Thr Asp Arg Glu Arg Leu
      290              295              300
Ala Glu Ala Arg Gln Arg Glu Leu Gln Arg Gln Glu Leu Leu Met Gln
305              310              315              320
Lys Arg Leu Ala Met Glu Ser Asn Lys Ile Leu Gln Glu Gln Gln Glu
      325              330              335
Met Glu Arg Gln Arg Arg Lys Glu Ile Ala Gln Lys Ala Ala Glu Glu
      340              345              350
Asn Glu Arg Tyr Arg Lys Glu Met Glu Gln Ile Val Glu Glu Glu Glu
      355              360              365
Lys Phe Lys Lys Gln Trp Glu Glu Asp Trp Gly Ser Lys Glu Gln Leu
      370              375              380
Leu Leu Pro Lys Thr Ile Thr Ala Glu Val His Pro Val Pro Leu Arg
385              390              395              400
Lys Pro Lys Tyr Asp Gln Gly Val Glu Pro Glu Leu Glu Pro Ala Asp
      405              410              415
Asp Leu Asp Gly Gly Thr Glu Glu Gln Gly Glu Gln Asp Phe Arg Lys
      420              425              430
Tyr Glu Glu Gly Phe Asp Pro Tyr Ser Met Phe Thr Pro Glu Gln Ile
      435              440              445
Met Gly Lys Asp Val Arg Leu Leu Arg Ile Lys Lys Glu Gly Ser Leu
      450              455              460
Asp Leu Ala Leu Glu Gly Gly Val Asp Ser Pro Ile Gly Lys Val Val
465              470              475              480
Val Ser Ala Val Tyr Glu Arg Gly Ala Ala Glu Arg His Gly Gly Ile
      485              490              495
Val Lys Gly Asp Glu Ile Met Ala Ile Asn Gly Lys Ile Val Thr Asp
      500              505              510
Tyr Thr Leu Ala Glu Ala Asp Ala Ala Leu Gln Lys Ala Trp Asn Gln
      515              520              525
Gly Gly Asp Trp Ile Asp Leu Val Val Ala Val Cys Pro Pro Lys Glu
      530              535              540
Tyr Asp Asp Glu Leu Thr Phe Leu Leu Lys Ser Lys Arg Gly Asn Gln
545              550              555              560

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Ile His Ala Leu Gly Asn Ser Glu Leu Arg Pro His Leu Val Asn Thr  
                                 565                                570                                575  
 Lys Pro Arg Thr Ser Leu Glu Arg Gly His Met Thr His Thr Arg Trp  
                                 580                                585                                590  
 His Pro Trp Asp Leu Asn Leu Ser Pro Arg Asn Leu Lys Leu Pro Leu  
                                 595                                600                                605  
 Ala Leu Asn Gln Gly Gln Ile Arg Asn Ser Ser Gly His Phe Phe Glu  
                                 610                                615                                620  
 Gly Gln Cys Gly Gly Lys Gly Ala Ala Ser Arg Leu Gly Glu Asp Leu  
 625                                630                                635                                640  
 Lys Asp Pro Asp Ser His Ser Phe Pro Leu Ala Gln  
                                 645                                650

<210> 552  
 <211> 2162  
 <212> DNA  
 <213> Homo Sapiens

<400> 552  
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 ttccggcata aggtggattt tctgattgaa aatgatgcag agaaggacta tctctatgat 180  
 gtgctgcgaa tgtaccacca gaccatggac gtggccgtgc tcgtgggaga cctgaagctg 240  
 gtcacatcatg aaccagccg tctgcctctg tttgatgcca ttcggccgct gatccactg 300  
 aagcaccagg tggaaataga tcagctgacc cccggcgct ccaggaagct gaaggaggtg 360  
 cgtctggacc gtctgcaccc cgaaggcctc ggctgagtg tgcgtggtgg cctggagtgt 420  
 ggctgtgggc tcttcatttc ccacctcacc aaaggcggtc aggcagacag cgtcgggctc 480  
 caggtagggg acgagatcgt ccggatcaat ggatattcca tctcctcctg taccatgatg 540  
 gaggtcatca acctcattcg aaccaagaaa actgtgtcca tcaaagttag acacatcggc 600  
 ctgatccccg tgaagagctc tcctgatgag cccctcactt ggcagtatgt ggatcagttt 660  
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 gagaagaagg tcttcacatcag cctggtaggc tcccagggcc ttggctgcag catttccagc 780  
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 aagatcctcc aggagcagca ggagatggag cggcaaagga gaaaagaaat tgcccagaag 1140  
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aa

2162

<210> 553  
 <211> 403  
 <212> PRT  
 <213> Homo Sapiens

<400> 553

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Met Asp Arg Lys Val Ala Arg Glu Phe Arg His Lys Val Asp Phe Leu
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Ile Glu Asn Asp Ala Glu Lys Asp Tyr Leu Tyr Asp Val Leu Arg Met
           20           25           30
Tyr His Gln Thr Met Asp Val Ala Val Leu Val Gly Asp Leu Lys Leu
           35           40           45
Val Ile Asn Glu Pro Ser Arg Leu Pro Leu Phe Asp Ala Ile Arg Pro
           50           55           60
Leu Ile Pro Leu Lys His Gln Val Glu Tyr Asp Gln Leu Thr Pro Arg
65           70           75           80
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
           85           90           95
Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu
           100          105          110
Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu
           115          120          125
Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser
           130          135          140
Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val
145          150          155          160
Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro
           165          170          175
Asp Glu Pro Leu Thr Trp Gln Tyr Val Asp Gln Phe Val Ser Glu Ser
           180          185          190
Gly Gly Val Arg Gly Ser Leu Gly Ser Pro Gly Asn Arg Glu Asn Lys
           195          200          205
Glu Lys Lys Val Phe Ile Ser Leu Val Gly Ser Arg Gly Leu Gly Cys
210          215          220
Ser Ile Ser Ser Gly Pro Ile Gln Lys Pro Gly Ile Phe Ile Ser His
225          230          235          240
Val Lys Pro Gly Ser Leu Ser Ala Glu Val Gly Leu Glu Ile Gly Asp
           245          250          255
Gln Ile Val Glu Val Asn Gly Val Asp Phe Ser Asn Leu Asp His Lys
           260          265          270
Glu Ala Val Asn Val Leu Lys Asn Ser Arg Ser Leu Thr Ile Ser Ile
           275          280          285
Val Ala Ala Ala Gly Arg Glu Leu Phe Met Thr Asp Arg Glu Arg Leu
           290          295          300
Ala Glu Ala Arg Gln Arg Glu Leu Gln Arg Gln Glu Leu Leu Met Gln
305          310          315          320
Lys Arg Leu Ala Met Glu Ser Asn Lys Ile Leu Gln Glu Gln Gln Glu
           325          330          335
Met Glu Arg Gln Arg Arg Lys Glu Ile Ala Gln Lys Ala Ala Glu Glu
           340          345          350
Asn Glu Arg Tyr Arg Lys Glu Met Glu Gln Ile Val Glu Glu Glu Glu
           355          360          365
Lys Phe Lys Lys Gln Trp Glu Glu Asp Trp Gly Ser Lys Glu Gln Leu

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370  
 Leu Leu Pro Lys Thr Ile Thr Ala Glu Val His Pro Val Pro Leu Arg  
 385 390 395 400  
 Lys Pro Lys

<210> 554  
 <211> 1789  
 <212> DNA  
 <213> Homo Sapiens

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 aaagagcaac taaagcataa agaatttctt ctggctgcta atacttgtaa ccgtgttggg 180  
 ggtctttgtt tgaaatgtgc tcagcatgaa gctgttcttt cccaaaccca tactaatgtt 240  
 catatgcaga ccatcgaaaag actgggttaa gaaagagatg acttgatgtc tgcactagtt 300  
 tccgtaagga gcagcttggc agatacgag caaagagaag caagtgccta tgaacagggtg 360  
 aaacaagttt tgcaaatatc tgaggaagcc aattttgaaa aaaccaaggc tttaatccag 420  
 tgtgaccagt tgaggaagga gctggagagg caggcggagc gacttgaaaa agaacttgca 480  
 tctcagcaag agaaaagggc cattgagaaa gacatgatga aaaaggaaat aacgaaagaa 540  
 agggagtaca tgggatcaaa gatgttgatc ttgtctcaga atattgcccc actggaggcc 600  
 caggtggaaa aggttacaaa ggaaaagatt tcagctatta atcaactgga ggaaattcaa 660  
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 gatgaaagca aacaacactt ggaacaggag cagcagaagg cagccctggc cagagaggag 900  
 tgcctgagac taacagaact gctgggcgaa tctgagcacc aactgcacct caccagacag 960  
 gaaaaagata gcattcagca gagcttttagc aaggaagcaa aggcccaagc ccttcaggcc 1020  
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 caaaggctaa ggcagctgga taagcacagc caggccacag cccagcagct ggtgcagctc 1380  
 ctgagcaagc agaaccagct tctcctggag aggcagagcc tgtcgggaaga ggtggaccgg 1440  
 ctgaggacc agttaccag catgccacaa tctgattgct gacctggatg gaacagagtg 1500  
 aaataaatga attacaaaga gatatttaca ttcactctggg ttagacttaa tatgccacaa 1560  
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 acgcggggcg tgtccccgca cgcagtcggg ctggagctgg agtctgactc tagctgagca 1680  
 gactcctggg gtatgttttc agaaatggct tgaagttagt tgtttaaatc tgctcattcg 1740  
 tatgctaggt tatacatatg attttcaata aatgaacttt ttaaagaaa 1789

<210> 555  
 <211> 493  
 <212> PRT  
 <213> Homo Sapiens

<400> 555  
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 20 25 30  
 Tyr Gln Arg Thr Cys Glu Asp Leu Lys Glu Gln Leu Lys His Lys Glu  
 35 40 45

Phe Leu Leu Ala Ala Asn Thr Cys Asn Arg Val Gly Gly Leu Cys Leu  
 50 55 60  
 Lys Cys Ala Gln His Glu Ala Val Leu Ser Gln Thr His Thr Asn Val  
 65 70 75 80  
 His Met Gln Thr Ile Glu Arg Leu Val Lys Glu Arg Asp Asp Leu Met  
 85 90 95  
 Ser Ala Leu Val Ser Val Arg Ser Ser Leu Ala Asp Thr Gln Gln Arg  
 100 105 110  
 Glu Ala Ser Ala Tyr Glu Gln Val Lys Gln Val Leu Gln Ile Ser Glu  
 115 120 125  
 Glu Ala Asn Phe Glu Lys Thr Lys Ala Leu Ile Gln Cys Asp Gln Leu  
 130 135 140  
 Arg Lys Glu Leu Glu Arg Gln Ala Glu Arg Leu Glu Lys Glu Leu Ala  
 145 150 155 160  
 Ser Gln Gln Glu Lys Arg Ala Ile Glu Lys Asp Met Met Lys Lys Glu  
 165 170 175  
 Ile Thr Lys Glu Arg Glu Tyr Met Gly Ser Lys Met Leu Ile Leu Ser  
 180 185 190  
 Gln Asn Ile Ala Gln Leu Glu Ala Gln Val Glu Lys Val Thr Lys Glu  
 195 200 205  
 Lys Ile Ser Ala Ile Asn Gln Leu Glu Glu Ile Gln Ser Gln Leu Ala  
 210 215 220  
 Ser Arg Glu Met Asp Val Thr Lys Val Cys Gly Glu Met Arg Tyr Gln  
 225 230 235 240  
 Leu Asn Lys Thr Asn Met Glu Lys Asp Glu Ala Glu Lys Glu His Arg  
 245 250 255  
 Glu Phe Arg Ala Lys Thr Asn Arg Asp Leu Glu Ile Lys Asp Gln Glu  
 260 265 270  
 Ile Glu Lys Leu Arg Ile Glu Leu Asp Glu Ser Lys Gln His Leu Glu  
 275 280 285  
 Gln Glu Gln Gln Lys Ala Ala Leu Ala Arg Glu Glu Cys Leu Arg Leu  
 290 295 300  
 Thr Glu Leu Leu Gly Glu Ser Glu His Gln Leu His Leu Thr Arg Gln  
 305 310 315 320  
 Glu Lys Asp Ser Ile Gln Gln Ser Phe Ser Lys Glu Ala Lys Ala Gln  
 325 330 335  
 Ala Leu Gln Ala Gln Gln Arg Glu Gln Glu Leu Thr Gln Lys Ile Gln  
 340 345 350  
 Gln Met Glu Ala Gln His Asp Lys Thr Glu Asn Glu Gln Tyr Leu Leu  
 355 360 365  
 Leu Thr Ser Gln Asn Thr Phe Leu Thr Lys Leu Lys Glu Glu Cys Cys  
 370 375 380  
 Thr Leu Ala Lys Lys Leu Glu Gln Ile Ser Gln Lys Thr Arg Ser Glu  
 385 390 395 400  
 Ile Ala Gln Leu Ser Gln Glu Lys Arg Tyr Thr Tyr Asp Lys Leu Gly  
 405 410 415  
 Lys Leu Gln Arg Arg Asn Glu Glu Leu Glu Glu Gln Cys Val Gln His  
 420 425 430  
 Gly Arg Val His Glu Thr Met Lys Gln Arg Leu Arg Gln Leu Asp Lys  
 435 440 445  
 His Ser Gln Ala Thr Ala Gln Gln Leu Val Gln Leu Leu Ser Lys Gln  
 450 455 460  
 Asn Gln Leu Leu Leu Glu Arg Gln Ser Leu Ser Glu Glu Val Asp Arg  
 465 470 475 480  
 Leu Arg Thr Gln Leu Pro Ser Met Pro Gln Ser Asp Cys

485

490

<210> 556  
 <211> 1306  
 <212> DNA  
 <213> Homo Sapiens

&lt;400&gt; 556

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cggcaaaggga	gaaaagaaat	tgcccagaag	gcagcagagg	aaaatgagag	ataccggaag	240
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tcctctctct	ctgcccctct	ctctaattgc	tgccaggatt	gtcactccaa	accttactct	1260
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<210> 557  
 <211> 328  
 <212> PRT  
 <213> Homo Sapiens

&lt;400&gt; 557

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Arg	Arg	Lys	Glu	Ile	Ala	Gln	Lys	Ala	Ala	Glu	Glu	Asn	Glu	Arg	Tyr
			20				25						30		
Arg	Lys	Glu	Met	Glu	Gln	Ile	Val	Glu	Glu	Glu	Glu	Lys	Phe	Lys	Lys
			35				40						45		
Gln	Trp	Glu	Glu	Asp	Trp	Gly	Ser	Lys	Glu	Gln	Leu	Leu	Leu	Pro	Lys
			50				55					60			
Thr	Ile	Thr	Ala	Glu	Val	His	Pro	Val	Pro	Leu	Arg	Lys	Pro	Lys	Tyr
65					70					75				80	
Asp	Gln	Gly	Val	Glu	Pro	Glu	Leu	Glu	Pro	Ala	Asp	Asp	Leu	Asp	Gly
				85					90					95	
Gly	Thr	Glu	Glu	Gln	Gly	Glu	Gln	Asp	Phe	Arg	Lys	Tyr	Glu	Glu	Gly
			100					105					110		
Phe	Asp	Pro	Tyr	Ser	Met	Phe	Thr	Pro	Glu	Gln	Ile	Met	Gly	Lys	Asp
			115				120					125			
Val	Arg	Leu	Leu	Arg	Ile	Lys	Lys	Glu	Gly	Ser	Leu	Asp	Leu	Ala	Leu
			130				135					140			

Glu Gly Gly Val Asp Ser Pro Ile Gly Lys Val Val Val Ser Ala Val  
 145 150 155 160  
 Tyr Glu Arg Gly Ala Ala Glu Arg His Gly Gly Ile Val Lys Gly Asp  
 165 170 175  
 Glu Ile Met Ala Ile Asn Gly Lys Ile Val Thr Asp Tyr Thr Leu Ala  
 180 185 190  
 Glu Ala Asp Ala Ala Leu Gln Lys Ala Trp Asn Gln Gly Gly Asp Trp  
 195 200 205  
 Ile Asp Leu Val Val Ala Val Cys Pro Pro Lys Glu Tyr Asp Asp Glu  
 210 215 220  
 Leu Thr Phe Leu Leu Lys Ser Lys Arg Gly Asn Gln Ile His Ala Leu  
 225 230 235 240  
 Gly Asn Ser Glu Leu Arg Pro His Leu Val Asn Thr Lys Pro Arg Thr  
 245 250 255  
 Ser Leu Glu Arg Gly His Met Thr His Thr Arg Trp His Pro Trp Asp  
 260 265 270  
 Leu Asn Leu Ser Pro Arg Asn Leu Lys Leu Pro Leu Ala Leu Asn Gln  
 275 280 285  
 Gly Gln Ile Arg Asn Ser Ser Gly His Phe Phe Glu Gly Gln Cys Gly  
 290 295 300  
 Gly Lys Gly Ala Ala Ser Arg Leu Gly Glu Asp Leu Lys Asp Pro Asp  
 305 310 315 320  
 Ser His Ser Phe Pro Leu Ala Gln  
 325

<210> 558  
 <211> 2289  
 <212> DNA  
 <213> Homo Sapiens

<400> 558  
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 gtgctgcgaa tgtaccacca gaccatggac gtggccgtgc tctgaggaga cctgaagctg 240  
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 ccacaggaga tggtgaagag gatgggtggtt tatcaagaca gcattcaaga caagatttcc 1440

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ttaaaaaaa 2289

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&lt;210&gt; 559

&lt;211&gt; 481

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 559

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Met Asp Arg Lys Val Ala Arg Glu Phe Arg His Lys Val Asp Phe Leu
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Ile Glu Asn Asp Ala Glu Lys Asp Tyr Leu Tyr Asp Val Leu Arg Met
          20          25          30
Tyr His Gln Thr Met Asp Val Ala Val Leu Val Gly Asp Leu Lys Leu
          35          40          45
Val Ile Asn Glu Pro Ser Arg Leu Pro Leu Phe Asp Ala Ile Arg Pro
          50          55          60
Leu Ile Pro Leu Lys His Gln Val Glu Tyr Asp Gln Leu Thr Pro Arg
65          70          75          80
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
          85          90          95
Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu
          100          105          110
Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu
          115          120          125
Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser
          130          135          140
Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val
145          150          155          160
Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro
          165          170          175
Asp Glu Pro Leu Thr Trp Gln Tyr Val Asp Gln Phe Val Ser Glu Ser
          180          185          190
Gly Gly Val Arg Gly Ser Leu Gly Ser Pro Gly Asn Arg Glu Asn Lys
          195          200          205
Glu Lys Lys Val Phe Ile Ser Leu Val Gly Ser Arg Gly Leu Gly Cys
          210          215          220
Ser Ile Ser Ser Gly Pro Ile Gln Lys Pro Gly Ile Phe Ile Ser His
225          230          235          240
Val Lys Pro Gly Ser Leu Ser Ala Glu Val Gly Leu Glu Ile Gly Asp
          245          250          255
Gln Ile Val Glu Val Asn Gly Val Asp Phe Ser Asn Leu Asp His Lys

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260 265 270  
 Glu Ala Val Asn Val Leu Lys Asn Ser Arg Ser Leu Thr Ile Ser Ile  
 275 280 285  
 Val Ala Ala Ala Gly Arg Glu Leu Phe Met Thr Asp Arg Glu Arg Leu  
 290 295 300  
 Ala Glu Ala Arg Gln Arg Glu Leu Gln Arg Gln Glu Leu Leu Met Gln  
 305 310 315 320  
 Lys Arg Leu Ala Met Glu Ser Asn Lys Ile Leu Gln Glu Gln Gln Glu  
 325 330 335  
 Met Glu Arg Gln Arg Arg Lys Glu Ile Ala Gln Lys Ala Ala Glu Glu  
 340 345 350  
 Asn Glu Arg Tyr Arg Lys Glu Met Glu Gln Ile Val Glu Glu Glu Glu  
 355 360 365  
 Lys Phe Lys Lys Gln Trp Glu Glu Asp Trp Gly Ser Lys Glu Gln Leu  
 370 375 380  
 Leu Leu Pro Lys Thr Ile Thr Ala Glu Val His Pro Val Pro Leu Arg  
 385 390 395 400  
 Lys Pro Lys Tyr Asp Gln Gly Val Glu Pro Glu Leu Glu Pro Ala Asp  
 405 410 415  
 Asp Leu Asp Gly Gly Thr Glu Glu Gln Gly Glu Gln Pro Gln Glu Met  
 420 425 430  
 Leu Lys Arg Met Val Val Tyr Gln Asp Ser Ile Gln Asp Lys Ile Ser  
 435 440 445  
 Gly Asn Met Arg Lys Ala Leu Thr Pro Thr Leu Cys Ser Pro Gln Ser  
 450 455 460  
 Arg Ser Trp Gly Arg Met Ser Gly Ser Tyr Ala Ser Arg Arg Arg Asp  
 465 470 475 480  
 Pro

<210> 560  
 <211> 2409  
 <212> DNA  
 <213> Homo Sapiens

<400> 560  
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 gggctcgtgca acgacgcagc tggacctggc ccagccatgg accgaaaagt ggcccagaa 120  
 ttccggcata aggtggattt tctgattgaa aatgatgcag agaaggacta tctctatgat 180  
 gtgctgcgaa tgtaccacca gaccatggac gtggccgtgc tctgtgggaga cctgaagctg 240  
 gtcacatcatg aaccagccg tctgcctctg tttgatgcca ttcggccgct gatccactg 300  
 aagcaccagg tggaatatga tcagctgacc ccccgccgct ccaggaagct gaaggagggtg 360  
 cgtctggacc gtctgcaccc cgaaggcctc ggccctgagtg tgcgtggtgg cctggagttt 420  
 ggctgtgggc tcttcatctc ccacctcatc aaaggcggtc aggcagacag cgtcgggctc 480  
 caggtagggg acgagatcgt ccggatcaat ggatattcca tctctcctg taccatgag 540  
 gaggtcatca acctcattcg aaccaagaaa actgtgtcca tcaaagtgag acacatcggc 600  
 ctgatccccg tgaaaagctc tctgatgag cccctcactt ggcagtatgt ggatcagttt 660  
 gtgtcggaat ctgggggctg gcgaggcagc ctgggctccc ctggaaatcg ggaaaacaag 720  
 gagaagaagg tcttcatcag cctggtaggc tcccgaggcc ttggctgcag catttccagc 780  
 ggccccatcc agaagcctgg catctttatc agccatgtga aacctggctc cctgtctgct 840  
 gaggtgggat tggagatagg ggaccagatt gtgcaagtca atggcgctga cttctctaac 900  
 ctggatcaca aggaggctgt aaatgtgctg aaaaatagcc gcagcctgac catctccatt 960  
 gtagctgcag ctggccggga gctgttcatt acagaccggg agcggtggc agaggcgagg 1020  
 cagcgtgagc tgcagcgga ggagcttctc atgcagaagg ggcgtgggat ggagtccaac 1080  
 aagatcctcc aggagcagca ggagatggag cggcaaaag gaaaagaaat tgcccagaag 1140



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gcagcagagg aaaatgagag ataccggaag gagatggaac agattgtaga ggaggaagag 1200
aagtttaaga agcaatggga agaagactgg ggctcaaagg aacagctact cttgcctaaa 1260
accatcactg ctgagggtaca cccagtaccc cttcgcaagc caaagtatga tcagggagtg 1320
gaacctgagc tcgagcccg c agatgacctg gatggaggca cggaggagca gggagagcag 1380
acattttgcc caagcccaca gcctccacga ggccctggcg tgtccaccat ctccaaacct 1440
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ccacaggaga tgttgaagag gatggtggtt tatcaagaca gcattcaaga caagatttcc 1560
ggaaatatga ggaaggcttt gacccctact ctatgttcac cccagagcag atcatgggga 1620
aggatgtccg gctcctacgc atcaagaagg agggatcctt agacctggcc ctggaaggcg 1680
gtgtggactc cccattggg aaggtggtcg tttctgctgt gtatgagcgg ggagctgctg 1740
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cagactacac cctggctgag gctgacgctg ccctgcagaa ggcctggaat cagggcgggg 1860
actggatcga ccttggtggt gccgtctgcc ccccaaagga gtatgacgat gagctgacct 1920
tcttgctgaa gtccaaaagg ggaaacccaa ttcacgcgtt aggaaacagt gagctccggc 1980
cccacctcgt gaacacaaag cctcggacca gccttgagag aggccacatg acacacacca 2040
gatggcatcc ttgggacctg aatctatcac ccaggaatct caaactccct ttggccctga 2100
accagggccca gataaggaac agctcgggcc acttttttga aggccaatgt ggaggaaagg 2160
gagcagccag ccgtttggga gaagatctca aggatccaga ctctcattcc tttcctctgg 2220
cccagtgaat ttggtctctc ccagctttgg gggactcctt ccttgaaccc taataagacc 2280
ccactggagt ctctctctct ccatccctct cctctgccct ctgctcta at tgctgccagg 2340
attgtcactc caaaccttac tctgagctca ttaataaaat aaacagattt attttccagc 2400
ttaaaaaaa 2409

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&lt;210&gt; 561

&lt;211&gt; 521

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 561

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Met Asp Arg Lys Val Ala Arg Glu Phe Arg His Lys Val Asp Phe Leu
1      5      10      15
Ile Glu Asn Asp Ala Glu Lys Asp Tyr Leu Tyr Asp Val Leu Arg Met
20      25      30
Tyr His Gln Thr Met Asp Val Ala Val Leu Val Gly Asp Leu Lys Leu
35      40      45
Val Ile Asn Glu Pro Ser Arg Leu Pro Leu Phe Asp Ala Ile Arg Pro
50      55      60
Leu Ile Pro Leu Lys His Gln Val Glu Tyr Asp Gln Leu Thr Pro Arg
65      70      75      80
Arg Ser Arg Lys Leu Lys Glu Val Arg Leu Asp Arg Leu His Pro Glu
85      90      95
Gly Leu Gly Leu Ser Val Arg Gly Gly Leu Glu Phe Gly Cys Gly Leu
100     105     110
Phe Ile Ser His Leu Ile Lys Gly Gly Gln Ala Asp Ser Val Gly Leu
115     120     125
Gln Val Gly Asp Glu Ile Val Arg Ile Asn Gly Tyr Ser Ile Ser Ser
130     135     140
Cys Thr His Glu Glu Val Ile Asn Leu Ile Arg Thr Lys Lys Thr Val
145     150     155     160
Ser Ile Lys Val Arg His Ile Gly Leu Ile Pro Val Lys Ser Ser Pro
165     170     175
Asp Glu Pro Leu Thr Trp Gln Tyr Val Asp Gln Phe Val Ser Glu Ser
180     185     190
Gly Gly Val Arg Gly Ser Leu Gly Ser Pro Gly Asn Arg Glu Asn Lys
195     200     205

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Glu Lys Lys Val Phe Ile Ser Leu Val Gly Ser Arg Gly Leu Gly Cys  
 210 215 220  
 Ser Ile Ser Ser Gly Pro Ile Gln Lys Pro Gly Ile Phe Ile Ser His  
 225 230 235 240  
 Val Lys Pro Gly Ser Leu Ser Ala Glu Val Gly Leu Glu Ile Gly Asp  
 245 250 255  
 Gln Ile Val Glu Val Asn Gly Val Asp Phe Ser Asn Leu Asp His Lys  
 260 265 270  
 Glu Ala Val Asn Val Leu Lys Asn Ser Arg Ser Leu Thr Ile Ser Ile  
 275 280 285  
 Val Ala Ala Ala Gly Arg Glu Leu Phe Met Thr Asp Arg Glu Arg Leu  
 290 295 300  
 Ala Glu Ala Arg Gln Arg Glu Leu Gln Arg Gln Glu Leu Leu Met Gln  
 305 310 315 320  
 Lys Arg Leu Ala Met Glu Ser Asn Lys Ile Leu Gln Glu Gln Gln Glu  
 325 330 335  
 Met Glu Arg Gln Arg Arg Lys Glu Ile Ala Gln Lys Ala Ala Glu Glu  
 340 345 350  
 Asn Glu Arg Tyr Arg Lys Glu Met Glu Gln Ile Val Glu Glu Glu Glu  
 355 360 365  
 Lys Phe Lys Lys Gln Trp Glu Glu Asp Trp Gly Ser Lys Glu Gln Leu  
 370 375 380  
 Leu Leu Pro Lys Thr Ile Thr Ala Glu Val His Pro Val Pro Leu Arg  
 385 390 395 400  
 Lys Pro Lys Tyr Asp Gln Gly Val Glu Pro Glu Leu Glu Pro Ala Asp  
 405 410 415  
 Asp Leu Asp Gly Gly Thr Glu Glu Gln Gly Glu Gln Thr Phe Cys Pro  
 420 425 430  
 Ser Pro Gln Pro Pro Arg Gly Pro Gly Val Ser Thr Ile Ser Lys Pro  
 435 440 445  
 Val Met Val His Gln Glu Pro Asn Phe Ile Tyr Arg Pro Ala Val Lys  
 450 455 460  
 Ser Glu Val Leu Pro Gln Glu Met Leu Lys Arg Met Val Val Tyr Gln  
 465 470 475 480  
 Asp Ser Ile Gln Asp Lys Ile Ser Gly Asn Met Arg Lys Ala Leu Thr  
 485 490 495  
 Pro Thr Leu Cys Ser Pro Gln Ser Arg Ser Trp Gly Arg Met Ser Gly  
 500 505 510  
 Ser Tyr Ala Ser Arg Arg Arg Asp Pro  
 515 520

&lt;210&gt; 562

&lt;211&gt; 1445

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 562

ctccggcagg	gagtcctagc	gcagactttg	cggttcatgg	agagtctctg	ggagacaggg	60
acctgcggac	gctgcagata	agttacgacg	cactgaaaga	tgaaaattct	aagctgagaa	120
gaaagctgaa	tgaggttcag	agcttctctg	aagctcaaac	agaaatgggtg	aggacgcttg	180
agcggaagtt	agaagcaaaa	atgatcaagg	aggaaagcga	ctaccacgac	ctggagtcgg	240
tggttcagca	ggtggagcag	aacctggagc	tgatgaccaa	acgggctgta	aaggcagaaa	300
accacgtcgt	gaaactaaaa	caggaaatca	gtttgctcca	ggcgcagggtc	tccaacttcc	360
agcgagagaa	tgaagccctg	cggtgcggcc	agggtgccag	cctgaccgtg	gtgaagcaga	420
acgccgacgt	ggccctgcag	aacctccggg	tggtcatgaa	cagtgcacag	gcttccatca	480

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agcaactggg ttccggagct gagacactga atcttggtgc cgaaatcctt aaatctatag      540
acagaatttc tgaagttaaa gacgaggagg aagactcttg aggacccttg ggtgttctca      600
gcatgaagct ccgtgtatac cctgagggtca ccaccgctcg atctaaatgt gcagttgtgt      660
ccttaaatat gcagtcttca cccagagtaa agtggtgatc gcaagagtcc agtgctgtgc      720
cctcagccag ttcttggtcca ccacaatggg agcagccctg gccgagttgt ctctgtggtt      780
tctatgcagc ctttcttggc gaaattcctg cgatcttata gattctaata agctcttgga      840
agacattgtc ataaaagcca gtgattttta gaaaaagagt ggttctggaa tcaatgtttt      900
ccagtcccat cccagaacat cagttgtaag ataagtacaa ttggttgctc ttgatttcat      960
aagtagaaca aacactaaat gtgcctctga gatggccacc ccgggcaggg acctgtgcct     1020
tccgccgatg ctcagggtct cctctgggtc ccgggtcact cttgtggccc cagtgggtgg     1080
tccctgcagt catggcctga gtgcgcaggg gccaccgctg ggctgctgct gtctctctcc     1140
ggggaccacg ggggaacaag gtcacacctt ccgtgctgtg aagctgtcca gatgtgcctc     1200
tttggtctgg ggttttggtg gacgtttcaa gtggcatttt gtacaatgca ggtagaatt     1260
caggaatttc aagtatgtgc ccgggtntgt caggtcccag ttgcctttnt gacggccccc     1320
ctcagaggga cggcgatgag cactaaatgc ttttttgant attttctat agattttttt     1380
taaaactttt ttttctctct gttccaattg atagctttct tatttaataa attctgtagt     1440
tcacc                                           1445

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&lt;210&gt; 563

&lt;211&gt; 192

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 563

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Pro Ala Gly Ser Pro Ser Ala Asp Phe Ala Val His Gly Glu Ser Leu
 1           5           10          15
Gly Asp Arg His Leu Arg Thr Leu Gln Ile Ser Tyr Asp Ala Leu Lys
          20          25          30
Asp Glu Asn Ser Lys Leu Arg Arg Lys Leu Asn Glu Val Gln Ser Phe
          35          40          45
Ser Glu Ala Gln Thr Glu Met Val Arg Thr Leu Glu Arg Lys Leu Glu
          50          55          60
Ala Lys Met Ile Lys Glu Glu Ser Asp Tyr His Asp Leu Glu Ser Val
          65          70          75          80
Val Gln Gln Val Glu Gln Asn Leu Glu Leu Met Thr Lys Arg Ala Val
          85          90          95
Lys Ala Glu Asn His Val Val Lys Leu Lys Gln Glu Ile Ser Leu Leu
          100         105         110
Gln Ala Gln Val Ser Asn Phe Gln Arg Glu Asn Glu Ala Leu Arg Cys
          115         120         125
Gly Gln Gly Ala Ser Leu Thr Val Val Lys Gln Asn Ala Asp Val Ala
          130         135         140
Leu Gln Asn Leu Arg Val Val Met Asn Ser Ala Gln Ala Ser Ile Lys
          145         150         155         160
Gln Leu Val Ser Gly Ala Glu Thr Leu Asn Leu Val Ala Glu Ile Leu
          165         170         175
Lys Ser Ile Asp Arg Ile Ser Glu Val Lys Asp Glu Glu Glu Asp Ser
          180         185         190

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&lt;210&gt; 564

&lt;211&gt; 1226

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 564

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ctggggccgcg aggcgcggag cttgggagcg gagcccaggc cgtgccgcgc ggcgccatga      60
agggcaagga ggagaaggag ggcggcgcac ggctgggcgc tggcggcgga agccccgaga      120
agagcccagag cgcgcaggag ctcaaggagc agggcaatcg tctgttcgtg ggccgaaagt      180
acccggaaggc ggcggcctgc tacggccgcg cgatcacccg gaaccgcgtg gtggccgtgt      240
attacaccaa ccgggccttg tgctacctga agatgcagca gcacgagcag gccctggccg      300
actgccggcg cgccctggag ctggacgggc agtctgtgaa ggcgcacttc ttcctggggc      360
agtgccagct ggagatggag agctatgatg aggccatcgc caatctgcag cgagcttaca      420
gcctggccaa ggagcagcgg ctgaacttcg gggacgacat cccagcgcct cttcgaatcg      480
cgaagaagaa gcgctggaac agcattgagg agcggcgcat ccaccaggag agcgagctgc      540
actcctacct ctccaggctc attgccgcgg agcgtgagag ggagctggaa gagtgccagc      600
gaaaccacga ggggtgatgag gacgacagcc acgtccgggc ccagcaggcc tgcattgagg      660
ccaagcacga caagtacatg gcggacatgg acgagctttt ttctcaggtg gatgagaaga      720
ggaagaagcg agacatcccc gactacctgt gtggcaagat cagcttttgag ctgatgcggg      780
agccgtgcat cagccccagt ggcattcacct acgaccgcaa ggacatcgag gagcacctgc      840
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ccaacttggc tatgaaggag gttattgacg cattcatctc tgagaatggc tgggtggagg      960
actactgagg ttccctgccc tacctggcgt cctggtccag gggagccctg ggcagaagcc     1020
cccggccctt aaacatagtt tatgtttttg gccaccccgga ccgcttcccc caagttctgc     1080
tgttggactc tggactgttt cccctctcag catcgctttt gctgggccgt gattgtcccc     1140
tttgtgggct ggaaaagcag gtgaggggtg gctgggctga ggccattgcc gccactatct     1200
gtgtaataaa atccgtgagc acgaaa

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&lt;210&gt; 565

&lt;211&gt; 303

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 565

```

Met Lys Gly Lys Glu Glu Lys Glu Gly Gly Ala Arg Leu Gly Ala Gly
  1              5              10              15
Gly Gly Ser Pro Glu Lys Ser Pro Ser Ala Gln Glu Leu Lys Glu Gln
              20              25              30
Gly Asn Arg Leu Phe Val Gly Arg Lys Tyr Pro Glu Ala Ala Ala Cys
              35              40              45
Tyr Gly Arg Ala Ile Thr Arg Asn Pro Leu Val Ala Val Tyr Tyr Thr
              50              55              60
Asn Arg Ala Leu Cys Tyr Leu Lys Met Gln Gln His Glu Gln Ala Leu
              65              70              75              80
Ala Asp Cys Arg Arg Ala Leu Glu Leu Asp Gly Gln Ser Val Lys Ala
              85              90              95
His Phe Phe Leu Gly Gln Cys Gln Leu Glu Met Glu Ser Tyr Asp Glu
              100              105              110
Ala Ile Ala Asn Leu Gln Arg Ala Tyr Ser Leu Ala Lys Glu Gln Arg
              115              120              125
Leu Asn Phe Gly Asp Asp Ile Pro Ser Ala Leu Arg Ile Ala Lys Lys
              130              135              140
Lys Arg Trp Asn Ser Ile Glu Glu Arg Arg Ile His Gln Glu Ser Glu
              145              150              155              160
Leu His Ser Tyr Leu Ser Arg Leu Ile Ala Ala Glu Arg Glu Arg Glu
              165              170              175
Leu Glu Glu Cys Gln Arg Asn His Glu Gly Asp Glu Asp Asp Ser His
              180              185              190
Val Arg Ala Gln Gln Ala Cys Ile Glu Ala Lys His Asp Lys Tyr Met
              195              200              205
Ala Asp Met Asp Glu Leu Phe Ser Gln Val Asp Glu Lys Arg Lys Lys

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210	215	220
Arg Asp Ile Pro Asp Tyr Leu Cys Gly Lys Ile Ser Phe Glu Leu Met		
225	230	235
Arg Glu Pro Cys Ile Thr Pro Ser Gly Ile Thr Tyr Asp Arg Lys Asp		240
	245	250
Ile Glu Glu His Leu Gln Arg Val Gly His Phe Asp Pro Val Thr Gly		255
	260	265
Ser Pro Leu Thr Gln Glu Gln Phe Ile Pro Asn Leu Ala Met Lys Glu		270
	275	280
Val Ile Asp Ala Phe Ile Ser Glu Asn Gly Trp Val Glu Asp Tyr		285
	290	295
		300

<210> 566  
 <211> 1857  
 <212> DNA  
 <213> Homo Sapiens

<400> 566

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tagtggccgg ccggccgctc tcatcccccg taaggagcag agtcctttgt actgaccaag	180
atgagcaaca tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca	240
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg cagaaatttt	300
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tttcatagtc caaggcggag atcctactgg cacagggagt ggtggagagt ctatctatgg	420
agcgccattc aaagatgaat ttcattcacg gttgcgtttt aatcggagag gactggttgc	480
catggcaaatt gctggttctc atgataatgg caccactttt ttcttcacac tgggtcgagc	540
agatgaactt aacaataagc ataccatctt tggaaagggt acaggggata cagtatataa	600
catgttgcca ctgtcagaag tagacattga tgatgacgaa agaccacata atccacacaa	660
aataaaaagc tgtgaggttt tgtttaatcc ttttgatgac atcattccaa gggaaattaa	720
aaggctgaaa aaagagaaac cagaggagga agtaaagaaa ttgaaacca aaggcacaaa	780
aaatttttagt ttactttcat ttggagagga agctgaggaa gaagaagagg aagtaaatcg	840
agttagtcag agcatgaagg gcaaaagcaa aagtagtcag gacttgctta aggatgatcc	900
acatctcagt tctgttccag ttgtagaaag tgaaaaagggt gatgcaccag atttagttga	960
tgatggagaa gatgaaagtg cagagcatga tgaatatatt gatggtgatg aaaagaacct	1020
gatgagagaa agaattgcca aaaaattaaa aaaggacaca agtgcgaaatg ttaaatcagc	1080
tggagaagga gaagtggaga agaaatcagt cagccgcagt gaagagctca gaaaagaagc	1140
aagacaatta aaacgggaac tcttagcagc aaaacaaaaa aaagtagaaa atgcagcaaa	1200
acaagcagaa aaaagaagtg aagaggaaga agcccctcca gatggtgctg ttgccgaata	1260
cagaagagaa aagcaaaagt atgaagcttt gaggaagcaa cagtcaaaga agggaaacttc	1320
ccgggaagat cagacccttg cactgctgaa ccagttttaa tctaaactca ctcaagcaat	1380
tgctgaaaca cctgaaaatg acattcctga aacagaagta gaagatgatg aaggatggat	1440
gtcacatgta cttcagtttg aggataaaag cagaaaagtg aaagatgcaa gcatgcaaga	1500
ctcagataca tttgaaatct atgatcctcg gaatccagtg aataaaaagaa ggagggaaga	1560
aagcaaaaag ctgatgagag agaaaaaaga aagaagataa aatgagaata atgataacca	1620
gaacttgctg gaaatgtgcc tacaatggcc ttgtaacagc cattgttccc aacagcatca	1680
cttaggggtg tgaagaagaa tatttttgaa cctgttgtct ggttttgaaa aacaattatc	1740
ttgttttgca aattgtggaa tgatgtaagc aaatgctttt ggttactggt acatgtgttt	1800
tttctagct gaccttttat attgctaata ctgaaataaa ataactttcc ttccaaa	1857

<210> 567  
 <211> 372  
 <212> PRT  
 <213> Homo Sapiens

<400> 567

Met	Ala	Asn	Ala	Gly	Ser	His	Asp	Asn	Gly	Thr	His	Phe	Phe	Phe	Thr
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Leu	Gly	Arg	Ala	Asp	Glu	Leu	Asn	Asn	Lys	His	Thr	Ile	Phe	Gly	Lys
			20					25					30		
Val	Thr	Gly	Asp	Thr	Val	Tyr	Asn	Met	Leu	Arg	Leu	Ser	Glu	Val	Asp
		35					40					45			
Ile	Asp	Asp	Asp	Glu	Arg	Pro	His	Asn	Pro	His	Lys	Ile	Lys	Ser	Cys
	50					55					60				
Glu	Val	Leu	Phe	Asn	Pro	Phe	Asp	Asp	Ile	Ile	Pro	Arg	Glu	Ile	Lys
65					70					75					80
Arg	Leu	Lys	Lys	Glu	Lys	Pro	Glu	Glu	Glu	Val	Lys	Lys	Leu	Lys	Pro
			85					90						95	
Lys	Gly	Thr	Lys	Asn	Phe	Ser	Leu	Leu	Ser	Phe	Gly	Glu	Glu	Ala	Glu
			100					105						110	
Glu	Glu	Glu	Glu	Glu	Val	Asn	Arg	Val	Ser	Gln	Ser	Met	Lys	Gly	Lys
		115					120					125			
Ser	Lys	Ser	Ser	His	Asp	Leu	Leu	Lys	Asp	Asp	Pro	His	Leu	Ser	Ser
	130					135					140				
Val	Pro	Val	Val	Glu	Ser	Glu	Lys	Gly	Asp	Ala	Pro	Asp	Leu	Val	Asp
145					150					155					160
Asp	Gly	Glu	Asp	Glu	Ser	Ala	Glu	His	Asp	Glu	Tyr	Ile	Asp	Gly	Asp
			165					170						175	
Glu	Lys	Asn	Leu	Met	Arg	Glu	Arg	Ile	Ala	Lys	Lys	Leu	Lys	Lys	Asp
		180						185						190	
Thr	Ser	Ala	Asn	Val	Lys	Ser	Ala	Gly	Glu	Gly	Glu	Val	Glu	Lys	Lys
		195					200					205			
Ser	Val	Ser	Arg	Ser	Glu	Glu	Leu	Arg	Lys	Glu	Ala	Arg	Gln	Leu	Lys
	210					215					220				
Arg	Glu	Leu	Leu	Ala	Ala	Lys	Gln	Lys	Lys	Val	Glu	Asn	Ala	Ala	Lys
225					230					235					240
Gln	Ala	Glu	Lys	Arg	Ser	Glu	Glu	Glu	Glu	Ala	Pro	Pro	Asp	Gly	Ala
			245					250						255	
Val	Ala	Glu	Tyr	Arg	Arg	Glu	Lys	Gln	Lys	Tyr	Glu	Ala	Leu	Arg	Lys
		260						265					270		
Gln	Gln	Ser	Lys	Lys	Gly	Thr	Ser	Arg	Glu	Asp	Gln	Thr	Leu	Ala	Leu
		275					280					285			
Leu	Asn	Gln	Phe	Lys	Ser	Lys	Leu	Thr	Gln	Ala	Ile	Ala	Glu	Thr	Pro
	290					295					300				
Glu	Asn	Asp	Ile	Pro	Glu	Thr	Glu	Val	Glu	Asp	Asp	Glu	Gly	Trp	Met
305					310					315					320
Ser	His	Val	Leu	Gln	Phe	Glu	Asp	Lys	Ser	Arg	Lys	Val	Lys	Asp	Ala
			325					330						335	
Ser	Met	Gln	Asp	Ser	Asp	Thr	Phe	Glu	Ile	Tyr	Asp	Pro	Arg	Asn	Pro
		340						345					350		
Val	Asn	Lys	Arg	Arg	Arg	Glu	Glu	Ser	Lys	Lys	Leu	Met	Arg	Glu	Lys
		355					360						365		
Lys	Glu	Arg	Arg												
	370														

&lt;210&gt; 568

&lt;211&gt; 1537

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 568

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gccgcgcgcc gatcggtcgt taccgcgagg cgctgggtggc cttcaggctg gacggcgcgg      60
gtcagccctg gttcgcgcgc ttctgggtct ttgaacagcc gcgatgtcga tcttcacccc      120
caccaaccag atccgcctaa ccaatgtggc cgtgggtacgg atgaagcgtg ccgggaagcg      180
cttcgaaatc gcctgctaca aaaacaaggt gtttgtaaat gtttctaaag gtcagggttg      240
cctcgatgaa gttctgcaga cccactcagt gtttgtaaat gtttctaaag gtcagggttg      300
caaaaaggaa gatctcatca gtgcgttttg aacagatgac caaactgaaa tctgtaagca      360
gattttgact aaaggagaag ttcaagtatc agataaagaa agacacacac aactggagca      420
gatgttttagg gacattgcaa ctattgtggc agacaaatgt gtgaatcctg aaacaaagag      480
accatacacc gtgatcctta ttgagagagc catgaaggac atccactatt cggtgaaaac      540
caacaagagt acaaaacagc aggctttgga agtgataaag cagttaaaag agaaaatgaa      600
gatagaacgt gctcacatga agcttcgggt catccttcca gtcaatgaag gcaagaactg      660
aaagaaaagc tcaagccact gatcaaggtc atagaaagtg aagattatgg ccaacagtta      720
gaaatcgtat gtctgattga cccgggctgc ttccgagaaa ttgatgagct aataaaaaag      780
gaaactaaag gcaaagggtt tttggaagta ctcaatctga aagatgtaga agaaggagat      840
gagaaatttg aatgacaccc atcaatctct tcacctctaa aacactaaaag tgtttccgtt      900
tccgacggca ctggtttcatg tctgtggtct gccaaatact tgcttaaaact atttgacatt      960
ttctatcttt gtgttaacag tggacacagc aaggctttcc tacataagta taataatgtg     1020
ggaatgattt ggttttaatt ataaactggg gtctaaatcc taaagcaaaa ttgaaactcc     1080
aagatgcaaa gtccagagtg gcattttgct actctgtctc atgccttgat agctttccaa     1140
aatgaaagtt acttgangca gctcttggtg gtgaaaagtt atttgtacag tagagtaaga     1200
ttattagggg tatgtctata caaaaaagg gggggtcttt cctaaaaaag aaaacatatg     1260
atgcttcatt tctacttaat ggaacttggt ttctgagggt cattatggta tcgtaatgta     1320
aagcttggtg gatgttcctg attatttgag gaacagatat aggaaaattg tgccggaatt     1380
acctttcatt gaacatgctg ccataaatta ggttattttt ggttaaaaaa taaaagtcaa     1440
ttatttttaa tttttaaagt ttataatata tattaatata ggtaaaattg tatgtaatca     1500
ataaaaccaa ttttatgttt attaaactta aaaaaaa      1537

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&lt;210&gt; 569

&lt;211&gt; 210

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 569

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Ala Ala Arg Arg Ser Val Val Thr Ala Arg Arg Trp Trp Pro Ser Gly
 1              5              10              15
Trp Thr Ala Arg Val Ser Pro Gly Ser Pro Ala Ser Gly Ser Leu Asn
 20              25              30
Ser Arg Asp Val Asp Leu His Pro His Gln Pro Asp Pro Asn Gln
 35              40              45
Cys Gly Arg Gly Thr Asp Glu Ala Cys Arg Glu Ala Leu Arg Asn Arg
 50              55              60
Leu Leu Gln Lys Gln Val Val Gly Trp Arg Ser Gly Val Glu Lys Asp
 65              70              75              80
Leu Asp Glu Val Leu Gln Thr His Ser Val Phe Val Asn Val Ser Lys
 85              90              95
Gly Gln Val Ala Lys Lys Glu Asp Leu Ile Ser Ala Phe Gly Thr Asp
100              105              110
Asp Gln Thr Glu Ile Cys Lys Gln Ile Leu Thr Lys Gly Glu Val Gln
115              120              125
Val Ser Asp Lys Glu Arg His Thr Gln Leu Glu Gln Met Phe Arg Asp
130              135              140
Ile Ala Thr Ile Val Ala Asp Lys Cys Val Asn Pro Glu Thr Lys Arg
145              150              155              160
Pro Tyr Thr Val Ile Leu Ile Glu Arg Ala Met Lys Asp Ile His Tyr

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165 170 175  
 Ser Val Lys Thr Asn Lys Ser Thr Lys Gln Gln Ala Leu Glu Val Ile  
 180 185 190  
 Lys Gln Leu Lys Glu Lys Met Lys Ile Glu Arg Ala His Met Lys Leu  
 195 200 205  
 Arg Phe  
 210

<210> 570  
 <211> 1211  
 <212> DNA  
 <213> Homo Sapiens

<400> 570  
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 gtttaatcct tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 180  
 agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aatttttagtt tacttttcatt 240  
 tggagaggaa gctgaggaag aagaggagga agtaaatcga gttagtcaga gcatgaaggg 300  
 caaaagcaaa agtagtcatg acttgcttaa ggatgatcca catctcagtt ctgttccagt 360  
 tgtagaaaagt gaaaaagggtg atgcagcaga tttagttgat gatggagaag atgaaagtgc 420  
 agagcatgat gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 480  
 aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag aagtggagaa 540  
 gaaatcagtc agcgcagtg aagagctcag aaaagaagca agacaattaa aacgggaact 600  
 cttagcagca gaacaaaaaa aagtagaaaa tgcagcaaaa caagcagaaa aaagaagtga 660  
 agaggaagaa gcccctccag atggtgctgt tgccgaatac agaagagaaa agcaaaaagta 720  
 tgaagctctg aggaagcaac agtcaaagaa gggaacttcc cggaagatc agacccttgc 780  
 actgctgaac cagttttaat ctaaactcac tcaagcaatt gctgaaacgc ctgaaaatga 840  
 cattcctgaa acagaagtag aagatgatga aggatggatg tcacatgtac ttcagtttga 900  
 ggataaaagc agaaaagtga aagatgcaag catgcaagac tcagatacat ttgaaatcta 960  
 tgatcctcgg aatccagtg ataaaagaag gagggaagaa agcaaaaagc tgatgagaga 1020  
 gaaaaaagaa agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1080  
 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt gaaaagaagt 1140  
 atttttgaac ctgttgtctg gttttgaaaa acaattatct tgttttgcaa attgtggaat 1200  
 gatgtaagca a 1211

<210> 571  
 <211> 354  
 <212> PRT  
 <213> Homo Sapiens

<400> 571  
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 Leu Ser Glu Val Asp Ile Asp Asp Asp Glu Arg Pro His Asn Pro His  
 20 25 30  
 Lys Ile Lys Ser Cys Glu Val Leu Phe Asn Pro Phe Asp Asp Ile Ile  
 35 40 45  
 Pro Arg Glu Ile Lys Arg Leu Lys Lys Glu Lys Pro Glu Glu Glu Val  
 50 55 60  
 Lys Lys Leu Lys Pro Lys Gly Thr Lys Asn Phe Ser Leu Leu Ser Phe  
 65 70 75 80  
 Gly Glu Glu Ala Glu Glu Glu Glu Glu Glu Val Asn Arg Val Ser Gln  
 85 90 95  
 Ser Met Lys Gly Lys Ser Lys Ser Ser His Asp Leu Leu Lys Asp Asp



Pro	His	Leu	Ser	Ser	Val	Pro	Val	Val	Glu	Ser	Glu	Lys	Gly	Asp	Ala
		115					120					125			
Ala	Asp	Leu	Val	Asp	Asp	Gly	Glu	Asp	Glu	Ser	Ala	Glu	His	Asp	Glu
		130				135					140				
Tyr	Ile	Asp	Gly	Asp	Glu	Lys	Asn	Leu	Met	Arg	Glu	Arg	Ile	Ala	Lys
145					150					155					160
Lys	Leu	Lys	Lys	Asp	Thr	Ser	Ala	Asn	Val	Lys	Ser	Ala	Gly	Glu	Gly
				165					170					175	
Glu	Val	Glu	Lys	Lys	Ser	Val	Ser	Arg	Ser	Glu	Glu	Leu	Arg	Lys	Glu
			180					185					190		
Ala	Arg	Gln	Leu	Lys	Arg	Glu	Leu	Leu	Ala	Ala	Glu	Gln	Lys	Lys	Val
		195					200					205			
Glu	Asn	Ala	Ala	Lys	Gln	Ala	Glu	Lys	Arg	Ser	Glu	Glu	Glu	Glu	Ala
		210				215					220				
Pro	Pro	Asp	Gly	Ala	Val	Ala	Glu	Tyr	Arg	Arg	Glu	Lys	Gln	Lys	Tyr
225					230					235					240
Glu	Ala	Leu	Arg	Lys	Gln	Gln	Ser	Lys	Lys	Gly	Thr	Ser	Arg	Glu	Asp
				245					250					255	
Gln	Thr	Leu	Ala	Leu	Leu	Asn	Gln	Phe	Lys	Ser	Lys	Leu	Thr	Gln	Ala
			260					265						270	
Ile	Ala	Glu	Thr	Pro	Glu	Asn	Asp	Ile	Pro	Glu	Thr	Glu	Val	Glu	Asp
		275					280						285		
Asp	Glu	Gly	Trp	Met	Ser	His	Val	Leu	Gln	Phe	Glu	Asp	Lys	Ser	Arg
		290				295					300				
Lys	Val	Lys	Asp	Ala	Ser	Met	Gln	Asp	Ser	Asp	Thr	Phe	Glu	Ile	Tyr
305					310					315					320
Asp	Pro	Arg	Asn	Pro	Val	Asn	Lys	Arg	Arg	Arg	Glu	Glu	Ser	Lys	Lys
				325				330						335	
Leu	Met	Arg	Glu	Lys	Lys	Glu	Arg	Arg	Ile	Leu	Pro	Val	Asn	Glu	Gly
			340				345						350		
Lys	Asn														

<210> 572  
 <211> 604  
 <212> DNA  
 <213> Homo Sapiens

<400> 572

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tcccttttagc	aacagggccc	ccaagaagct	cccgttcatt	cacccttacc	ttggccccc	120
ggttggaccc	ccaaaggctc	ccttacccca	aagtgggttg	ttgaataaat	cttctcagtt	180
ccctggctcc	caaggcccat	tgaagaagat	tgtacaaggc	gtgcctcaag	taccccgagt	240
ggaaacagaa	gcacctgcct	cacttcaagc	cgtggctgca	cccggagcag	agcccgttgc	300
cgagcctggc	gctgtcggag	ctgtcgggtg	agcatgcgga	ctcactggag	aacatcgacg	360
agagcgcggt	ggccgagagc	agagaggagc	ggatgggcgg	cgcgggcggc	gagggcagcg	420
acgacgacac	cttcacctga	gcccgacccg	cttcagggac	ggagacagga	ccgggcgagc	480
cctggggcgg	cggccgctcc	tgcactttct	ccccccccc	acccggcacc	tggtggcacc	540
gggccaaggcc	caggcgggtg	ctgcagcctg	gctggacaga	gccaataaaa	cggatccac	600
agcc						604

<210> 573  
 <211> 195  
 <212> PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 573

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Leu Arg Gln Lys Ile Leu Val Pro Thr Phe Cys Ser Ile Pro Lys Gly
 1           5           10           15
Leu Thr Phe Ile Pro Phe Ser Asn Arg Ala Pro Lys Lys Leu Pro Phe
          20           25           30
Ile His Pro Tyr Leu Gly Pro Gln Val Gly Pro Pro Lys Ala Pro Leu
          35           40           45
Pro Gln Ser Gly Trp Leu Asn Lys Ser Ser Gln Phe Pro Gly Ser Gln
          50           55           60
Gly Pro Leu Lys Lys Ile Val Gln Gly Val Pro Gln Val Pro Arg Val
65           70           75           80
Glu Thr Glu Ala Pro Ala Ser Leu Gln Ala Val Ala Ala Pro Gly Ala
          85           90           95
Glu Pro Val Ala Glu Pro Gly Ala Val Gly Ala Val Gly Ala Ala Cys
          100          105          110
Gly Leu Thr Gly Glu His Arg Arg Glu Arg Gly Gly Arg Glu Gln Arg
          115          120          125
Gly Ala Asp Gly Arg Arg Gly Arg Arg Gly Gln Arg Arg Arg His Leu
          130          135          140
His Leu Ser Pro His Arg Phe Arg Asp Gly Asp Arg Thr Gly Arg Ala
145          150          155          160
Leu Gly Arg Arg Pro Leu Leu His Phe Leu Pro Ser Pro Thr Arg His
          165          170          175
Leu Val Ala Pro Gly Gln Ala Gln Ala Gly Ala Ala Ala Trp Leu Asp
          180          185          190
Arg Ala Gln
          195

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&lt;210&gt; 574

&lt;211&gt; 742

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 574

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cccaccaggg cccctcgat gcagagacag aggtcggtgc tgaccgctgc acgtcgactg      60
cctaccagga gcagaggccc caggtggagc aagttggcaa agtcgctcct ctctccccag      120
ggctgccggc aatggggggg cctggccccg gcccctgtga ggaccccgcg ggtgctgggg      180
gagcaggtgc agggggctcc gagccctgg tgactgtcac cgtgcagtgc gccttcacag      240
tggccctgag ggcaggaaga ggagccgacc tgtccagcct gcgggcaact ctgggccaag      300
ccttccttca ccaggcccag cttgggcaat tcagttacct agccccaggt gaggacgggc      360
actgggtccc catccccgag gaggagtgc tgcagagggc ctggcaggac gcagctgcct      420
gccccagggg gctgcagctg cagtgcaggg gagccggggg tcggccgggc ctttaccagg      480
tggtggccca gcacagatac tccgcccagg ggccagagga cctgggcttc cgacaggggg      540
acacggtgga cgtcctgtgt gaagtggacc aggcattggc ggagggccac tgtgacggcc      600
gcatcggcat cttccccaaag tcttcgtgg tccccgccg ccctcggatg tcaggagccc      660
ccggccgcct gcccgatcc cagcaggag atcagcccta atgatgctgt gtccatgatg      720
cttttaataa aaacaacccc ca                                742

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&lt;210&gt; 575

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

<400> 575

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Thr	Ser	Thr	Ala	Tyr	Gln	Glu	Gln	Arg	Pro	Gln	Val	Glu	Gln	Val	Gly
			20					25						30	
Lys	Val	Ala	Pro	Leu	Ser	Pro	Gly	Leu	Pro	Ala	Met	Gly	Gly	Pro	Gly
		35					40					45			
Pro	Gly	Pro	Cys	Glu	Asp	Pro	Ala	Gly	Ala	Gly	Gly	Ala	Gly	Ala	Gly
	50					55					60				
Gly	Ser	Glu	Pro	Leu	Val	Thr	Val	Thr	Val	Gln	Cys	Ala	Phe	Thr	Val
65					70					75					80
Ala	Leu	Arg	Ala	Gly	Arg	Gly	Ala	Asp	Leu	Ser	Ser	Leu	Arg	Ala	Leu
				85				90						95	
Leu	Gly	Gln	Ala	Phe	Leu	His	Gln	Ala	Gln	Leu	Gly	Gln	Phe	Ser	Tyr
			100					105						110	
Leu	Ala	Pro	Gly	Glu	Asp	Gly	His	Trp	Val	Pro	Ile	Pro	Glu	Glu	Glu
		115					120					125			
Ser	Leu	Gln	Arg	Ala	Trp	Gln	Asp	Ala	Ala	Ala	Cys	Pro	Arg	Gly	Leu
	130					135					140				
Gln	Leu	Gln	Cys	Arg	Gly	Ala	Gly	Gly	Arg	Pro	Val	Leu	Tyr	Gln	Val
145					150					155					160
Val	Ala	Gln	His	Arg	Tyr	Ser	Ala	Gln	Gly	Pro	Glu	Asp	Leu	Gly	Phe
				165				170						175	
Arg	Gln	Gly	Asp	Thr	Val	Asp	Val	Leu	Cys	Glu	Val	Asp	Gln	Ala	Trp
			180					185					190		
Leu	Glu	Gly	His	Cys	Asp	Gly	Arg	Ile	Gly	Ile	Phe	Pro	Lys	Cys	Phe
		195					200					205			
Val	Val	Pro	Ala	Gly	Pro	Arg	Met	Ser	Gly	Ala	Pro	Gly	Arg	Leu	Pro
	210					215					220				
Arg	Ser	Gln	Gln	Gly	Asp	Gln	Pro								
225						230									

<210> 576  
 <211> 1087  
 <212> DNA  
 <213> Homo Sapiens

<400> 576

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ttcaaaacaac	cggtaaccac	agtcacaaat	catcctagta	ataaagtga	atcagaccca	180
caacgaatga	atgaacagcc	acgtcagctt	ttctgggaga	agaggctaca	aggacttagt	240
gcatcagatg	taacagaaca	aattataaaa	accatgggac	tacccaaagg	tcttcaagga	300
gttggtccag	gtagcaatga	tgagaccctt	ttatctgctg	ttgccagtgc	tttgccacaca	360
agctctgctg	caatcacagg	gcaagtctcc	gctgctgtgg	aaaagaaccc	tgctgtttgg	420
cttaacacat	ctcaaccctt	ctgcaaagct	tttattgtca	cagatgaaga	catcaggaaa	480
caggaagagc	gagtacagca	agtacgcaag	aaattggaag	aagcactgat	ggcagacatc	540
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gctttttta	atgcactaac	aatgcctttt	tagatgtatt	tttgatgtat	atatctatta	780
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gcaggaccct	aagatgaagc	tgagcttttg	atgccaggtg	caatttactg	gaaatgtagc	900
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taaatttccc	agttaaagat	tattgtgact	tcactgtata	taaacaatatt	tttatacttt	1020

attgaaaggg gacacctgta cattcttcca tcgtcactgt aaagacaaat aaatgattat 1080  
attcaca 1087

<210> 577  
<211> 200  
<212> PRT  
<213> Homo Sapiens

<400> 577  
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Asp Pro Leu Asn Gln Asn Lys Gly Lys Pro Asp Leu Asn Thr Thr Leu  
20 25 30  
Pro Ile Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro Val Thr Lys Val  
35 40 45  
Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro Gln Arg Met Asn  
50 55 60  
Glu Gln Pro Arg Gln Leu Phe Trp Glu Lys Arg Leu Gln Gly Leu Ser  
65 70 75 80  
Ala Ser Asp Val Thr Glu Gln Ile Ile Lys Thr Met Glu Leu Pro Lys  
85 90 95  
Gly Leu Gln Gly Val Gly Pro Gly Ser Asn Asp Glu Thr Leu Leu Ser  
100 105 110  
Ala Val Ala Ser Ala Leu His Thr Ser Ser Ala Pro Ile Thr Gly Gln  
115 120 125  
Val Ser Ala Ala Val Glu Lys Asn Pro Ala Val Trp Leu Asn Thr Ser  
130 135 140  
Gln Pro Leu Cys Lys Ala Phe Ile Val Thr Asp Glu Asp Ile Arg Lys  
145 150 155 160  
Gln Glu Glu Arg Val Gln Gln Val Arg Lys Lys Leu Glu Glu Ala Leu  
165 170 175  
Met Ala Asp Ile Leu Ser Arg Ala Ala Asp Thr Glu Glu Met Asp Ile  
180 185 190  
Glu Met Asp Ser Gly Asp Glu Ala  
195 200

<210> 578  
<211> 2569  
<212> DNA  
<213> Homo Sapiens

<400> 578  
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tctgaaattt tgtgagttcc cacagaagac tataatgcct ggatttaaaa caactgtata 120  
tgtttctcat ataaatgacc tttcagactt ttatgttcaa ctaatagaag atgaagctga 180  
aattagtcac ctttcagaga gattaaacag tgttaaaaca aggcccgaat attatgtagg 240  
tccacctttg caaagaggag atatgatatg tgctgttttc ccagaagata atttatggta 300  
tcgtgctgtg atcaaggagc aacaacccaa tgaccttctc tctgtgcagt ttatagatta 360  
tggcaatgtt tctgtggttc atactaacia aataggtagg cttgaccttg ttaatgcaat 420  
attgcccggg ttgtgcattc attgctcctt gcagggtatt gaggttcttg acaataaaaa 480  
ttctaagaaa atgatgcatt acttttccca acggaccagc gaggttgcaa taagatgtga 540  
atgtgttaaaa tttcaagaca gatgggaagt tattcttgcg gatgaacatg ggatcatagc 600  
agatgatatg attagcaggt atgctctcag tgaaaaatct caagtagaac tttctaccca 660  
agtaattaaa agtgccagtt caaagtctgt taacaaatca gacattgaca cttcagttat 720  
tcttaactgg tataatccag aaaaaaaaaat gataagagat tatgccaactg tgatagatgg 780

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acctgagtagc ttttggtgtc agtttgctga tacggagaaa cttcagtgtt tagaagtaga      840
agtagacagact gctggagaaac aggttagcaga caggagaaat tgtatcccat gtccttatat      900
tgtagatcct tgtatagtaa gatacagaga agatggacat tattataggg cacttatcac      960
taatatttgt gaagattatc ttgtatctgt caggcttgtg gactttggaa acattgaaga     1020
ctgtgtggac ccaaaagcac tctgggcat tcttcttgaa cttctgtcgg ttcccatgca     1080
agcctttcca tgttgccctc cagggtttta catttcagaa ggattatgtt ctcaagaggg      1140
aaatgactat ttctatgaaa taataacaga agatgtgttg gaaataacaa tactagaaat      1200
cagaagggat gtttgtgata tcccttttagc aattgttgac ttgaaaagca aaggtaaaag      1260
tattaatgag aaaatggaga aatattctaa gactgggtatt aaaagtgtc tccctatga      1320
aaatattgac tcagagataa agcagactct tgggtcctac aatcttgatg taggacttaa      1380
gaaattaagt aataaagctg taaaaataa aatatatatg gaacaacaga cagatgagct      1440
tgctgaaata actgaaaaag atgtaaacat tattggaacc aaaccaagta acttccgtga      1500
ccctaaaact gataacattt gtgaagggtt tgaaaacccc tgcaaagata aaattgatac      1560
tgaggaactg gaaggtgaat tagagtgccca tctgggtgac aaagcagagt ttgatgataa      1620
atacctgatt acaggattta acacattact accacatgct aatgaaacaa aggagatact      1680
agaactgaat tcacttgagg tgccgcttct tcttgatgat gaatcaaaag aattcttaga      1740
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cccgggtgcc ccaaatgtgc cactctccca agagtgtgtc acaaaaggcg ccatggagct      1860
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tacagcccag ctgcctttag atgacaagat ggatcctttg tctttaggag ttagtcagaa      1980
agcacaggaa tccatgtgta ctgaggacat gagaaagtca agttgtgtag aatcttttga      2040
tgaccagcgc aggatgtcat tgcattctaca tggagcagat tgtgatccta aaacacagaa      2100
tgaaatgaat atattgtgaag aagaatttgt agagtataaa aacagggtatg ccatttcggc      2160
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&lt;210&gt; 579

&lt;211&gt; 752

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 579

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Arg Val Lys Ala Thr Leu Ser Glu Arg Lys Ile Gly Asp Ser Cys Asp
 1           5           10           15
Lys Asp Leu Pro Leu Lys Phe Cys Glu Phe Pro Gln Lys Thr Ile Met
          20          25          30
Pro Gly Phe Lys Thr Thr Val Tyr Val Ser His Ile Asn Asp Leu Ser
          35          40          45
Asp Phe Tyr Val Gln Leu Ile Glu Asp Glu Ala Glu Ile Ser His Leu
          50          55          60
Ser Glu Arg Leu Asn Ser Val Lys Thr Arg Pro Glu Tyr Tyr Val Gly
65          70          75          80
Pro Pro Leu Gln Arg Gly Asp Met Ile Cys Ala Val Phe Pro Glu Asp
          85          90          95
Asn Leu Trp Tyr Arg Ala Val Ile Lys Glu Gln Gln Pro Asn Asp Leu
          100         105         110
Leu Ser Val Gln Phe Ile Asp Tyr Gly Asn Val Ser Val Val His Thr
          115         120         125
Asn Lys Ile Gly Arg Leu Asp Leu Val Asn Ala Ile Leu Pro Gly Leu
          130         135         140

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Cys Ile His Cys Ser Leu Gln Gly Phe Glu Val Pro Asp Asn Lys Asn  
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 Ser Lys Lys Met Met His Tyr Phe Ser Gln Arg Thr Ser Glu Ala Ala  
 165 170 175  
 Ile Arg Cys Glu Phe Val Lys Phe Gln Asp Arg Trp Glu Val Ile Leu  
 180 185 190  
 Ala Asp Glu His Gly Ile Ile Ala Asp Asp Met Ile Ser Arg Tyr Ala  
 195 200 205  
 Leu Ser Glu Lys Ser Gln Val Glu Leu Ser Thr Gln Val Ile Lys Ser  
 210 215 220  
 Ala Ser Ser Lys Ser Val Asn Lys Ser Asp Ile Asp Thr Ser Val Phe  
 225 230 235 240  
 Leu Asn Trp Tyr Asn Pro Glu Lys Lys Met Ile Arg Ala Tyr Ala Thr  
 245 250 255  
 Val Ile Asp Gly Pro Glu Tyr Phe Trp Cys Gln Phe Ala Asp Thr Glu  
 260 265 270  
 Lys Leu Gln Cys Leu Glu Val Glu Val Gln Thr Ala Gly Glu Gln Val  
 275 280 285  
 Ala Asp Arg Arg Asn Cys Ile Pro Cys Pro Tyr Ile Gly Asp Pro Cys  
 290 295 300  
 Ile Val Arg Tyr Arg Glu Asp Gly His Tyr Tyr Arg Ala Leu Ile Thr  
 305 310 315 320  
 Asn Ile Cys Glu Asp Tyr Leu Val Ser Val Arg Leu Val Asp Phe Gly  
 325 330 335  
 Asn Ile Glu Asp Cys Val Asp Pro Lys Ala Leu Trp Ala Ile Pro Ser  
 340 345 350  
 Glu Leu Leu Ser Val Pro Met Gln Ala Phe Pro Cys Cys Leu Ser Gly  
 355 360 365  
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 Tyr Glu Ile Ile Thr Glu Asp Val Leu Glu Ile Thr Ile Leu Glu Ile  
 385 390 395 400  
 Arg Arg Asp Val Cys Asp Ile Pro Leu Ala Ile Val Asp Leu Lys Ser  
 405 410 415  
 Lys Gly Lys Ser Ile Asn Glu Lys Met Glu Lys Tyr Ser Lys Thr Gly  
 420 425 430  
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 435 440 445  
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 450 455 460  
 Lys Ala Val Gln Asn Lys Ile Tyr Met Glu Gln Gln Thr Asp Glu Leu  
 465 470 475 480  
 Ala Glu Ile Thr Glu Lys Asp Val Asn Ile Ile Gly Thr Lys Pro Ser  
 485 490 495  
 Asn Phe Arg Asp Pro Lys Thr Asp Asn Ile Cys Glu Gly Phe Glu Asn  
 500 505 510  
 Pro Cys Lys Asp Lys Ile Asp Thr Glu Glu Leu Glu Gly Glu Leu Glu  
 515 520 525  
 Cys His Leu Val Asp Lys Ala Glu Phe Asp Asp Lys Tyr Leu Ile Thr  
 530 535 540  
 Gly Phe Asn Thr Leu Leu Pro His Ala Asn Glu Thr Lys Glu Ile Leu  
 545 550 555 560  
 Glu Leu Asn Ser Leu Glu Val Pro Leu Ser Pro Asp Asp Glu Ser Lys  
 565 570 575  
 Glu Phe Leu Glu Leu Glu Ser Ile Glu Leu Gln Asn Ser Leu Val Val

580					585					590						
Asp	Glu	Glu	Lys	Gly	Glu	Leu	Ser	Pro	Val	Pro	Pro	Asn	Val	Pro	Leu	
595					600					605						
Ser	Gln	Glu	Cys	Val	Thr	Lys	Gly	Ala	Met	Glu	Leu	Phe	Thr	Leu	Gln	
610					615					620						
Leu	Pro	Leu	Ser	Cys	Glu	Ala	Glu	Lys	Gln	Pro	Glu	Leu	Glu	Leu	Pro	
625					630					635					640	
Thr	Ala	Gln	Leu	Pro	Leu	Asp	Asp	Lys	Met	Asp	Pro	Leu	Ser	Leu	Gly	
645					650					655						
Val	Ser	Gln	Lys	Ala	Gln	Glu	Ser	Met	Cys	Thr	Glu	Asp	Met	Arg	Lys	
660					665					670						
Ser	Ser	Cys	Val	Glu	Ser	Phe	Asp	Asp	Gln	Arg	Arg	Met	Ser	Leu	His	
675					680					685						
Leu	His	Gly	Ala	Asp	Cys	Asp	Pro	Lys	Thr	Gln	Asn	Glu	Met	Asn	Ile	
690					695					700						
Cys	Glu	Glu	Glu	Phe	Val	Glu	Tyr	Lys	Asn	Arg	Asp	Ala	Ile	Ser	Ala	
705					710					715					720	
Leu	Met	Pro	Phe	Ser	Leu	Arg	Lys	Lys	Ala	Val	Met	Glu	Ala	Ser	Thr	
725					730					735						
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<210> 580  
 <211> 2077  
 <212> DNA  
 <213> Homo Sapiens

<400> 580

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gggaaaaggat	aaagaaaaag	aaagtactgt	acacattgaa	actcatcaga	acacaagcaa	600
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accaaaaatgt aaaatataag taataattct catgaaa 2077

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&lt;210&gt; 581

&lt;211&gt; 312

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 581

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Arg Gly Arg Asp Leu Asn Tyr Pro Asp Thr Thr Ile Asp Leu Ser His
1          5          10          15
Leu Gln Pro Gln Arg Ser Ile Gln Lys Leu Ala Ser Lys Glu Glu Ser
20          25          30
Ser Asn Ser Ser Asp Ser Lys Ser Gln Ser Arg Arg His Leu Ser Ala
35          40          45
Lys Glu Arg Arg Glu Met Lys Lys Lys Lys Leu Pro Ser Asp Ser Gly
50          55          60
Asp Leu Glu Ala Leu Glu Gly Lys Asp Lys Glu Lys Glu Ser Thr Val
65          70          75          80
His Ile Glu Thr His Gln Asn Thr Ser Lys Asn Val Ala Ala Val Gln
85          90          95
Pro Met Lys Arg Gly Gln Lys Ser Lys Met Lys Lys Met Lys Glu Lys
100         105         110
Tyr Lys Asp Gln Asp Glu Glu Asp Arg Glu Leu Ile Met Lys Leu Leu
115         120         125
Gly Ser Ala Gly Ser Asn Lys Glu Glu Lys Gly Lys Lys Gly Lys Lys
130         135         140
Gly Lys Thr Lys Asp Glu Pro Val Lys Lys Gln Pro Gln Lys Pro Arg
145         150         155         160
Gly Gly Gln Arg Val Ser Asp Asn Ile Lys Lys Glu Thr Pro Phe Leu
165         170         175
Glu Val Ile Thr His Glu Leu Gln Asp Phe Ala Val Asp Asp Pro His
180         185         190
Asp Asp Lys Glu Glu Gln Asp Leu Asp Gln Gln Gly Asn Glu Glu Asn
195         200         205
Leu Phe Asp Ser Leu Thr Gly Gln Pro His Pro Glu Asp Val Leu Leu
210         215         220
Phe Ala Ile Pro Ile Cys Ala Pro Tyr Thr Thr Met Thr Asn Tyr Lys
225         230         235         240
Tyr Lys Val Lys Leu Thr Pro Gly Val Gln Lys Lys Gly Lys Ala Ala
245         250         255
Lys Thr Ala Leu Asn Ser Phe Met His Ser Lys Glu Ala Thr Ala Arg
260         265         270
Glu Lys Asp Leu Phe Arg Ser Val Lys Asp Thr Asp Leu Ser Arg Asn
275         280         285
Ile Pro Gly Lys Val Lys Ser Val Cys Thr Gln Ser Ser Glu Arg Lys
290         295         300
Lys Glu Ile Ala Glu Met Lys Phe
305         310

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<210> 582  
 <211> 3309  
 <212> DNA  
 <213> Homo Sapiens

<400> 582

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&lt;210&gt; 583

&lt;211&gt; 872

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 583

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Val Val Gly Leu Asp Val Gly Ser Gln Ser Cys Tyr Ile Ala Val Ala
20      25      30
Arg Ala Gly Gly Ile Glu Thr Ile Ala Asn Glu Phe Ser Asp Arg Cys
35      40      45
Thr Pro Ser Val Ile Ser Phe Gly Ser Lys Asn Arg Thr Ile Gly Val
50      55      60
Ala Ala Lys Asn Gln Gln Ile Thr His Ala Asn Asn Thr Val Ser Asn
65      70      75      80
Phe Lys Arg Phe His Gly Arg Ala Phe Asn Asp Pro Phe Ile Gln Lys
85      90      95
Glu Lys Glu Asn Leu Ser Tyr Asp Leu Val Pro Leu Lys Asn Gly Gly
100     105     110
Val Gly Ile Lys Val Met Tyr Met Gly Glu Glu His Leu Phe Ser Val
115     120     125
Glu Gln Ile Thr Ala Met Leu Leu Thr Lys Leu Lys Glu Thr Ala Glu
130     135     140
Asn Ser Leu Lys Lys Pro Val Thr Asp Cys Val Ile Ser Val Pro Ser
145     150     155     160
Phe Phe Thr Asp Ala Glu Arg Arg Ser Val Leu Asp Ala Ala Gln Ile
165     170     175
Val Gly Leu Asn Cys Leu Arg Leu Met Asn Asp Met Thr Ala Val Ala
180     185     190
Leu Asn Tyr Gly Ile Tyr Lys Gln Asp Leu Pro Ser Leu Asp Glu Lys
195     200     205
Pro Arg Ile Val Val Phe Val Asp Met Gly His Ser Ala Phe Gln Val
210     215     220
Ser Ala Cys Ala Phe Asn Lys Gly Lys Leu Lys Val Leu Gly Thr Ala
225     230     235     240
Phe Asp Pro Phe Leu Gly Gly Lys Asn Phe Asp Glu Lys Leu Val Glu
245     250     255
His Phe Cys Ala Glu Phe Lys Thr Lys Tyr Lys Leu Asp Ala Lys Ser
260     265     270
Lys Ile Arg Ala Leu Leu Arg Leu Tyr Gln Glu Cys Glu Lys Leu Lys
275     280     285
Lys Leu Met Ser Ser Asn Ser Thr Asp Leu Pro Leu Asn Ile Glu Cys
290     295     300
Phe Met Asn Asp Lys Asp Val Ser Gly Lys Met Asn Arg Ser Gln Phe
305     310     315     320
Glu Glu Leu Cys Ala Glu Leu Leu Gln Lys Ile Glu Val Pro Leu Tyr

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-312-

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 785 790 795 800  
 Thr Lys Ile Lys Glu Leu Asn Asn Thr Cys Glu Pro Val Val Thr Gln  
 805 810 815  
 Pro Lys Pro Lys Ile Glu Ser Pro Lys Leu Glu Arg Thr Pro Asn Gly  
 820 825 830  
 Pro Asn Ile Asp Lys Lys Glu Glu Asp Leu Glu Asp Lys Asn Asn Phe  
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 Asn Ser Val Asn Met Asp Leu Asp  
 865 870

<210> 584  
 <211> 2918  
 <212> DNA  
 <213> Homo Sapiens

<400> 584  
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&lt;210&gt; 585

&lt;211&gt; 687

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 585

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Met Ala Ala Glu Val Ala Leu Ser Glu Ser Ala Lys Asp Gln Lys Ala
1          5          10          15
Ala Asn Pro Tyr Val Thr Pro Asn Asn Arg Tyr Gly Tyr Gln Asn Gly
20          25          30
Ala Ser Tyr Thr Trp Gln Phe Glu Ala Arg Lys Ala Gln Ile Leu Lys
35          40          45
Cys Met Glu Cys Gly Ser Ser His Asp Thr Leu Gln Gln Leu Thr Ala
50          55          60
His Met Met Val Thr Gly His Phe Leu Lys Val Thr Thr Ser Ala Ser
65          70          75          80
Lys Lys Gly Lys Gln Leu Val Leu Asp Pro Val Val Glu Glu Lys Ile
85          90          95
Gln Ser Ile Pro Leu Pro Pro Thr Thr His Thr Arg Leu Pro Ala Ser
100         105         110
Ser Ile Lys Lys Gln Pro Asp Ser Pro Ala Gly Ser Thr Thr Ser Glu
115         120         125
Glu Lys Lys Glu Pro Glu Lys Glu Lys Pro Pro Val Ala Gly Asp Ala
130         135         140
Glu Lys Ile Lys Glu Glu Ser Glu Asp Ser Leu Glu Lys Phe Glu Pro
145         150         155         160
Ser Thr Leu Tyr Pro Tyr Leu Arg Glu Glu Asp Leu Asp Asp Ser Pro
165         170         175
Lys Gly Gly Leu Asp Ile Leu Lys Ser Leu Glu Asn Thr Val Ser Thr
180         185         190
Ala Ile Ser Lys Ala Gln Asn Gly Ala Pro Ser Trp Gly Gly Tyr Pro
195         200         205
Ser Ile His Ala Ala Tyr Gln Leu Pro Gly Thr Val Lys Pro Leu Pro
210         215         220
Ala Ala Val Gln Ser Val Gln Val Gln Pro Ser Tyr Ala Gly Gly Val
225         230         235         240
Lys Ser Leu Ser Ser Ala Glu His Asn Ala Leu Leu His Ser Pro Gly
245         250         255
Ser Leu Thr Pro Pro Pro His Lys Ser Asn Val Ser Ala Met Glu Glu

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260 265 270  
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 275 280 285  
 Pro Pro Glu Lys Glu Lys Ser Ser Leu Ala Lys Ala Ala Ser Pro Ile  
 290 295 300  
 Ala Lys Glu Asn Lys Asp Phe Pro Lys Thr Glu Glu Val Ser Gly Lys  
 305 310 315 320  
 Pro Gln Lys Lys Gly Pro Glu Ala Glu Thr Trp Glu Ala Lys Lys Glu  
 325 330 335  
 Gly Pro Leu Asp Val His Thr Pro Asn Gly Thr Glu Pro Leu Lys Ala  
 340 345 350  
 Lys Val Thr Asn Gly Cys Asn Asn Leu Gly Ile Ile Met Asp His Ser  
 355 360 365  
 Pro Glu Pro Ser Phe Ile Asn Pro Leu Ser Ala Leu Gln Ser Ile Met  
 370 375 380  
 Asn Thr His Leu Gly Lys Val Ser Lys Pro Val Ser Pro Ser Leu Asp  
 385 390 395 400  
 Pro Leu Ala Met Leu Tyr Lys Ile Ser Asn Ser Met Leu Asp Lys Pro  
 405 410 415  
 Val Tyr Pro Ala Thr Pro Val Lys Gln Ala Asp Ala Ile Asp Arg Tyr  
 420 425 430  
 Tyr Tyr Glu Asn Ser Asp Gln Pro Ile Asp Leu Thr Lys Ser Lys Asn  
 435 440 445  
 Lys Pro Leu Val Ser Ser Val Ala Asp Ser Val Ala Ser Pro Leu Arg  
 450 455 460  
 Glu Ser Ala Leu Met Asp Ile Ser Asp Met Val Lys Asn Leu Thr Gly  
 465 470 475 480  
 Arg Leu Thr Pro Lys Ser Ser Thr Pro Ser Thr Val Ser Glu Lys Ser  
 485 490 495  
 Asp Ala Asp Gly Ser Ser Phe Glu Glu Ala Leu Asp Glu Leu Ser Pro  
 500 505 510  
 Val His Lys Arg Lys Gly Arg Gln Ser Asn Trp Asn Pro Gln His Leu  
 515 520 525  
 Leu Ile Leu Gln Ala Gln Phe Ala Ser Ser Leu Arg Glu Thr Thr Glu  
 530 535 540  
 Gly Lys Tyr Ile Met Ser Asp Leu Gly Pro Gln Glu Arg Val His Ile  
 545 550 555 560  
 Ser Lys Phe Thr Gly Leu Ser Met Thr Thr Ile Ser His Trp Leu Ala  
 565 570 575  
 Asn Val Lys Tyr Gln Leu Arg Arg Thr Gly Gly Thr Lys Phe Leu Lys  
 580 585 590  
 Asn Leu Asp Thr Gly His Pro Val Phe Phe Cys Asn Asp Cys Ala Ser  
 595 600 605  
 Gln Phe Arg Thr Ala Ser Thr Tyr Ile Ser His Leu Glu Thr His Leu  
 610 615 620  
 Gly Phe Ser Leu Lys Asp Leu Ser Lys Leu Pro Leu Asn Gln Ile Gln  
 625 630 635 640  
 Glu Gln Gln Asn Val Ser Lys Val Leu Thr Asn Lys Thr Leu Gly Pro  
 645 650 655  
 Leu Gly Ala Thr Glu Glu Asp Leu Gly Ser Thr Phe Gln Cys Lys Leu  
 660 665 670  
 Cys Asn Arg Thr Phe Ala Lys Gln Ala Arg Ser Gln Thr Ala Pro  
 675 680 685

&lt;210&gt; 586

&lt;211&gt; 1898

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 586

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ccgccttggg tcagcctgct cccctgcttc ctgccgcagt gggggccgctc agcctggcca      60
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tggagtcgga tggggaaggg ccgcccccca ggggtgggctt tgtggacagc accatcaaga      180
gcctggacga naagctgcgg actctgtctt accaggagca cgtgcccacc tcctcagcct      240
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ctcagggggc cgtgatggag cagggcacgt cctcgtcaat gacagagtcg tctcccagga      480
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gcgtcccca ggatgtacct gcttttgtga gacctgcacg tgtgganccc acanacaggg      600
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cagtgtgggg ctcaactgcan acaacacggg cctgaacggg aangcagtg anaccancan      1560
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gacgaactgc acaanctggt ggacnaatg acaacaanan ngtggggggc gcgcactgaa      1800
accacnctc naccctnaa ncnnaacnc aacttccana cattgaggcc cgcaggtggg      1860
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&lt;210&gt; 587

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 587

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Ala Leu Gly Gln Pro Ala Pro Leu Leu Pro Ala Ala Val Gly Ala Val
 1              5              10              15
Ser Leu Ala Thr Ser Gln Leu Pro Ser Pro Pro Leu Gly Pro Thr Val
 20              25              30
Pro Pro Gln Pro Pro Ser Ala Leu Glu Ser Asp Gly Glu Gly Pro Pro
 35              40              45
Pro Arg Val Gly Phe Val Asp Ser Thr Ile Lys Ser Leu Asp Lys Leu
 50              55              60
Arg Thr Leu Leu Tyr Gln Glu His Val Pro Thr Ser Ser Ala Ser Ala
 65              70              75              80
Gly Thr Pro Val Glu Val Gly Asp Arg Phe Thr Leu Glu Pro Leu Arg

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<210> 588
<211> 707
<212> DNA
<213> Homo Sapiens
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caaaagttgc	acagaagtca	tatggaaatg	aaanaaggtt	tttttgccca	cctccttgtg		180
tatatcttat	gggcantgga	tggaagaaaa	aaaangaaca	aatggaacgc	gatggttgtt		240
ctgaacaaaa	gtctcaaccg	tgtgcattta	ttgggatagg	aaatagtgac	caaaaaatgc		300
agcagctana	cttgggaagga	aagaactatt	gcacagccaa	aacattgtat	atatctgact		360
cagacaagcg	aaagcacttc	atgttgtctg	taaagatgtt	ctatggcaac	agtgatgaca		420
ttggttgtgt	cctcagcaag	cgaataaaaag	tcntctccaa	accttccaaa	aagaacagtc		480
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acnateccan	acagttagta	ccagatactt	gcatgttana	aggaggtnat	tttcatgcca	600
gttcacagcn	gtggggagcc	ttttttatcc	anctcttgga	tgatgatgan	tcnaaggag	660
aagaattcac	ngtccgagat	ggctacatcc	attatggaca	aacagtc		707

<210> 589  
 <211> 551  
 <212> DNA  
 <213> Homo Sapiens

<400> 589						
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ttttgttaac	tttttgccac	actcaagtca	gtttaagtcc	tagcaaaaag	acggtagtta	180
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gattgtcctt	gctgcaactgc	aatgtggccg	cggccctggt	tctggtgtgt	angtaaaggt	360
aaggctgggtg	gaataaatga	ttccaccatt	tccgaccaa	gttactggaa	cctggactgg	420
ttgccggacc	catctccaac	cttctcggaa	tgcanaaatg	tctgggacga	cacagaacat	480
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<210> 590  
 <211> 478  
 <212> DNA  
 <213> Homo Sapiens

<400> 590						
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<210> 591  
 <211> 707  
 <212> DNA  
 <213> Homo Sapiens

<400> 591						
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ggataccact	gtggctgtaa	atgatgtgac	actggttgaa	tttgtgctgg	cgtttgtgta	240
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ttgccggacc	catctccaac	cttctcggaa	tgcagaaatg	tctgggacga	cacagancat	480
actctctcca	cacctgtaca	tagtttongc	ttctacatcc	ccaaaccaca	ctcgtaaatt	540
tggantgaaa	ttctgtcctg	taagttcaag	cattnctacg	ccccaccgg	ccatttcaac	600
tgaaaggctc	tctaccacan	ggnacaggaa	atgactgggg	caaggacagg	gcccatcccc	660
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<210> 592  
 <211> 541  
 <212> DNA  
 <213> Homo Sapiens

<400> 592  
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 cccccccctn ttngtttttn atcctntagg gggcacctgn cttnantngg cncaaaggat 180  
 ngccccctgct gcantgcaat ttggccncgg ccctggctcct ggtttntagg taaaggtaag 240  
 gcnggtgnaa taantaatcc caccattncg naccaaattt actgnaacct gaacngggtg 300  
 ccgnacccan cncancctn cncgaaatgc aaaantttct ggnacaacnc aaaccntacn 360  
 cncnccaccc ctntnctat ttncagctnc tacntcccca aaccacacnc ntaaattngn 420  
 attaaaatcc tntcctgtaa ttccaagcat ggctacttcc ccaccgccat tcaactnaag 480  
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<210> 593  
 <211> 605  
 <212> DNA  
 <213> Homo Sapiens

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 ctctctcnc acctgggttca tantttcagc ttctacatcc cccaaaccac actcntaaat 540  
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 gaaag 605

<210> 594  
 <211> 666  
 <212> DNA  
 <213> Homo Sapiens

<400> 594  
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 ctgtttaatc gactacgac ccagacagtt ngtagcagat acttgcattg anaaggaggt 600  
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 tgaatc 666

<210> 595

<211> 600  
 <212> DNA  
 <213> Homo Sapiens

<400> 595  
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 tgtgtttgat tegttagggg gcacctggct tgaattggct cgaaggattg ctccgtctgc 180  
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<210> 596  
 <211> 835  
 <212> DNA  
 <213> Homo Sapiens

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 ggataccact gtggctgtaa atnatgtgac actggttgaa tttgtgctgg cgtttgtgta 240  
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<210> 597  
 <211> 443  
 <212> DNA  
 <213> Homo Sapiens

<400> 597  
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 tggatgctcg atttcctctg cctctctctt tgccgagctt tccgcnacgg ccgctccgag 180  
 gacttcnncn ggaccgcga cagcgcanag gctattatct atggactatc cagtctaaca 240  
 gcttgccagt gagaacgata tacatatgtc agtttttgac aagaattgca gcaggaaaaa 300  
 cccttgatgc ncagtttgaa aatgatgaac gaattacacc cttggaatcn gccctgatga 360  
 tttgggggtc aattgaaaag gaacatgacn aacttctntga agaaatacag aatttaatta 420  
 aaattcangc tatngctgtt tgt 443

<210> 598  
 <211> 491  
 <212> DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 598

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gaggattcag ttaccgcaga ctgtttgtca ctaacacttt ttcttgatc caaattagct      180
tcagtttcca tttcaacatc attaccacta ggtttatctt gagaagttat tgttcttgtc      240
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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 599

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&lt;211&gt; 523

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 600

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&lt;211&gt; 530

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 601

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&lt;211&gt; 311

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 602

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&lt;210&gt; 603

&lt;211&gt; 289

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 603

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&lt;210&gt; 604

&lt;211&gt; 356

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 604

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&lt;210&gt; 605

&lt;211&gt; 290

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 605

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&lt;210&gt; 606

&lt;211&gt; 714

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 606

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&lt;211&gt; 687

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 607

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&lt;210&gt; 608

&lt;211&gt; 994

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 609

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&lt;211&gt; 707

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 614

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&lt;211&gt; 714

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&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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 <213> Homo Sapiens

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 <212> DNA  
 <213> Homo Sapiens

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 caacaaaaac ttgtttaaat ngttccttna atttnnacta cttaaaaanca taggtntaaa 180  
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 <213> Homo Sapiens

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 ccaaagacnt ggaagaaacc aaaagatcgg acccgancca ctgaagagat gttagaggca 240  
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 gctgtggaag aaantggaga anaagctgag ccagtnctg ntgggtgctga gagtgtctct 420  
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 <212> DNA  
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 acttttatacc agtacctttt tcttccatga tcaccttttt ttctctttcc cctctcccac 180  
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 ccttctctgt atctgantct aggtacttga gtaagatcgg cactctctgc ttgataacag 600  
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 gcacaatana ntgactataa tcaataataa cttacttgta tttttttaa tgatctaaaa 240  
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 ctccatgata cacgtnnttc acattgatgc ctgtgtcaaa acatctcaca taccctgtaa 360  
 atatatacat gtactatgta ccacaaaatg tttacaaaat aagtganaca ttctaattaa 420  
 agactgaaat ctttttctaa ataattgata tacatgtttt gtgatctgta cacacttatt 480  
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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 626

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catccacanc	ttttgcccc					680

&lt;210&gt; 627

&lt;211&gt; 753

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 627

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&lt;210&gt; 628

&lt;211&gt; 675

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 628

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gttaaancca	ccttaacata	aaccttatng	caattntaca	cntcttttga	acncaatcta	180
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698

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 <212> DNA  
 <213> Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 638

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&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 641

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 642

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 643

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&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;213&gt; Homo Sapiens

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 647

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 645

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 650

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&lt;210&gt; 651

&lt;211&gt; 780

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 651

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&lt;210&gt; 652

&lt;211&gt; 518

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 652

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&lt;210&gt; 653

&lt;211&gt; 490

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 653

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&lt;210&gt; 654

&lt;211&gt; 359

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 654

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 cactaaaatt ccagtcaga gatgtgagac catgagagag aagcacatgc aaaaaacanc 480  
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 <212> DNA  
 <213> Homo Sapiens

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 tatttttttaa aaaancnaaa naataaagaa tatntncaaa agggacctgg aatctgtnag 180  
 ctgattccaa aaacnaaata anttnaaaat cntgggtgaa acctgaacat tctacctctg 240  
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 aatttcccta tnaaaaacaa aactggggccc tacagcaaaa tatccaaatg ggttagtctt 540  
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 <212> DNA  
 <213> Homo Sapiens

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<212> DNA  
<213> Homo Sapiens

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<212> DNA  
<213> Homo Sapiens

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aaagaatgca tcttccccaa gagaaagcca agggtagaca tactgtgcct tgtatgccac 660  
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aatgc 726

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<212> DNA  
<213> Homo Sapiens

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&lt;210&gt; 661

&lt;211&gt; 399

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 661

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&lt;210&gt; 662

&lt;211&gt; 826

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 662

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&lt;210&gt; 663

&lt;211&gt; 770

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 663

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&lt;210&gt; 664

&lt;211&gt; 593

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 664

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&lt;210&gt; 665

&lt;211&gt; 1024

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 665

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&lt;210&gt; 666

&lt;211&gt; 734

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 666

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&lt;210&gt; 667

&lt;211&gt; 592

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 667

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&lt;210&gt; 678

&lt;211&gt; 1771

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 678

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&lt;210&gt; 679

&lt;211&gt; 1367

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 679

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&lt;210&gt; 680

&lt;211&gt; 2545

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 680

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&lt;210&gt; 681

&lt;211&gt; 1745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 681

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&lt;210&gt; 682

&lt;211&gt; 1745

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 682

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&lt;210&gt; 683

&lt;211&gt; 3127

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 683

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 <212> PRT  
 <213> Homo Sapiens

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 Lys Ala Thr Ile Pro Glu Val Lys Asn Ser Glu Asn Ser Ser Ser Arg  
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 Gln Val Ser Ala Asn Asn Gln Phe Ser Ile Thr Lys Asn Arg Asp Gly  
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 Arg Glu Asn Arg Arg Arg Asn Ser Lys Ile Gly Asp Asp Asn Glu Asn  
 65 70 75 80  
 Leu Thr Phe Lys Leu Glu Val Asn Glu Leu Ser Gly Lys Leu Asp Asn  
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 Thr Asn Glu Tyr Asn Ser Asn Asp Gly Lys Lys Leu Pro Gln Gly Glu  
 100 105 110  
 Ser Arg Ser Tyr Glu Val Met Gly Ser Met Glu Glu Thr Leu Cys Asn  
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 Ile Asp Asp Arg Asp Gly Asn Arg Asn Val His Leu Glu Phe Thr Glu  
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 Arg Glu Ser Arg Lys Asp Gly Glu Asp Glu Phe Val Lys Glu Met Arg  
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 180 185 190  
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 Ser Asn Val Phe Asn Ile Leu Arg Glu Asn Asp Phe Glu Pro Lys Phe  
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 Phe Ser Asp Leu Gln Ser Leu Arg Lys Phe Ala Ser Gln Lys Ser Ser  
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 Phe Leu Phe Leu Lys Glu Val Lys Val Ala Lys Pro Glu Glu Met Lys  
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 325 330 335  
 Glu Glu Ala Ser Gly Met Glu Asp Asp Glu Asp Thr Ser Gly Leu Glu  
 340 345 350  
 Glu Glu Glu Glu Glu Glu Ala Ser Gly Leu Glu Glu Asp Xaa Ser Ser  
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 Xaa Leu Glu Glu Glu Glu Glu Gln Thr Ser Glu Gln Asp Ser Thr Phe  
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 Xaa Gly His Thr Leu Val Asp Ala Lys His Glu Val Glu Ile Thr Ser

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385          390          395          400
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Thr Ser Leu Thr Glu Lys Lys Ala Ser Arg Arg Gln Lys Glu Ile Pro
          435          440          445
Phe Ser Tyr Leu Val Gly Asp Ser Gly Lys Lys Lys Leu Val Lys His
          450          455          460
Gln Val Val His Lys Thr Gln Glu Glu Glu Glu Thr Ala Val Pro Thr
465          470          475          480
Ser Gln Gly Thr Gly Thr Thr Cys Leu Thr Leu Cys Leu Ala Ser Pro
          485          490          495
Ser Lys Ser Leu Glu Met Ser His Asp Glu His Lys Lys His Ser His
          500          505          510
Thr Asn Leu Ser Ile Ser Thr Gly Val Thr Lys Leu Lys Lys Thr Glu
          515          520          525
Glu Lys Lys His Arg Thr Leu His Thr Glu Glu Leu Thr Ser Lys Glu
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Ala Asp Leu Thr Glu Glu Thr Glu Glu Asn Leu Arg Ser Ser Val Ile
545          550          555          560
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          565          570          575
His Ser Gly Val Leu Glu Ile Glu Asn Ser Val Asp Asp Leu Ser Ser
          580          585          590
Arg Met Asp Ile Leu Glu Glu Arg Ile Asp Ser Leu Glu Asp Gln Ile
          595          600          605
Glu Glu Phe Ser Lys Asp Thr Met Gln Met Thr Lys Gln Ile Ile Ser
          610          615          620
Lys Glu Gly Pro Arg Asp Ile Glu Glu Arg Ser Arg Ser Cys Asn Ile
625          630          635          640
Arg Leu Ile Gly Ile Pro Glu Lys Glu Ser Tyr Glu Asn Arg Ala Glu
          645          650          655
Asp Ile Ile Lys Glu Ile Ile Asp Glu Asn Phe Ala Glu Leu Lys Lys
          660          665          670
Gly Ser Ser Leu Glu Ile Val Ser Ala Cys Arg Val Pro Ser Lys Ile
          675          680          685
Asp Glu Lys Arg Leu Thr Pro Arg His Ile Leu Val Lys Phe Trp Asn
          690          695          700
Ser Ser Asp Lys Glu Lys Ile Ile Arg Pro Ser Arg Glu Arg Arg Glu
705          710          715          720
Ile Thr Tyr Gln Gly Thr Arg Ile Arg Leu Thr Ala Asp Leu Ser Leu
          725          730          735
Asp Thr Leu Asp Ala Arg Ser Lys Trp Ser Asn Val Phe Lys Val Leu
          740          745          750
Leu Glu Lys Gly Phe Asn Pro Arg Thr Leu Tyr Pro Ala Lys Met Ala
          755          760          765
Phe Asp Phe Arg Gly Lys Thr Lys Val Phe Leu Ser Ile Glu Glu Phe
          770          775          780
Arg Asp Tyr Val Leu His Met Pro Thr Leu Arg Glu Leu Leu Gly Asn
785          790          795          800
Asn Ile Pro

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&lt;210&gt; 685

&lt;211&gt; 947

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 685

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Gln Tyr Leu Gln Lys Val Val Leu Lys Asp Leu Trp Lys His Ser Phe
      35           40           45
Ser Trp Pro Phe Gln Arg Pro Val Asp Ala Val Lys Leu Lys Leu Pro
      50           55           60
Asp Tyr Tyr Thr Ile Ile Lys Asn Pro Met Asp Leu Asn Thr Ile Lys
65           70           75           80
Lys Arg Leu Glu Asn Lys Tyr Tyr Ala Lys Ala Ser Glu Cys Ile Glu
      85           90           95
Asp Phe Asn Thr Met Phe Ser Asn Cys Tyr Leu Tyr Asn Lys Pro Gly
      100          105          110
Asp Asp Ile Val Leu Met Ala Gln Ala Leu Glu Lys Leu Phe Met Gln
      115          120          125
Lys Leu Ser Gln Met Pro Gln Glu Glu Gln Val Val Gly Val Lys Glu
      130          135          140
Arg Ile Lys Lys Gly Thr Gln Gln Asn Ile Ala Val Ser Ser Ala Lys
145          150          155          160
Glu Lys Ser Ser Pro Ser Ala Thr Glu Lys Val Phe Lys Gln Gln Glu
      165          170          175
Ile Pro Ser Val Phe Pro Lys Thr Ser Ile Ser Pro Leu Asn Val Val
      180          185          190
Gln Gly Ala Ser Val Asn Ser Ser Ser Gln Thr Ala Ala Gln Val Thr
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Lys Gly Val Lys Arg Lys Ala Asp Thr Thr Thr Pro Ala Thr Ser Ala
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Val Lys Ala Ser Ser Glu Phe Ser Pro Thr Phe Thr Glu Lys Ser Val
225          230          235          240
Ala Leu Pro Pro Ile Lys Glu Asn Met Pro Lys Asn Val Leu Pro Asp
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Ser Gln Gln Gln Tyr Asn Val Val Glu Thr Val Lys Val Thr Glu Gln
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Leu Arg His Cys Ser Glu Ile Leu Lys Glu Met Leu Ala Lys Lys His
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Phe Ser Tyr Ala Trp Pro Phe Tyr Asn Pro Val Asp Val Asn Ala Leu
      290          295          300
Gly Leu His Asn Tyr Tyr Asp Val Val Lys Asn Pro Met Asp Leu Gly
305          310          315          320
Thr Ile Lys Glu Lys Met Asp Asn Gln Glu Tyr Lys Asp Ala Tyr Ser
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Phe Ala Ala Asp Val Arg Leu Met Phe Met Asn Cys Tyr Lys Tyr Asn
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Pro Pro Asp His Glu Val Val Thr Met Ala Arg Met Leu Gln Asp Val
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Pro Leu Cys Tyr Ile Lys Thr Asp Ile Thr Glu Thr Thr Gly Arg Glu
385          390          395          400

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 420 425 430  
 Val His Gln Gln Leu Gln Val Leu Ser Gln Val Pro Phe Arg Lys Leu  
 435 440 445  
 Asn Lys Lys Lys Glu Lys Ser Lys Lys Glu Lys Lys Lys Glu Lys Val  
 450 455 460  
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 Lys Glu Lys Ser Lys Arg Asn Gln Pro Lys Lys Arg Lys Gln Gln Phe  
 485 490 495  
 Ile Gly Leu Lys Ser Glu Asp Glu Asp Asn Ala Lys Pro Met Asn Tyr  
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 Asp Glu Lys Arg Gln Leu Ser Leu Asn Ile Asn Lys Leu Pro Gly Asp  
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 Ala Ser Thr Leu Arg Glu Leu Glu Lys Tyr Val Ser Ala Cys Leu Arg  
 565 570 575  
 Lys Arg Pro Leu Lys Pro Pro Ala Lys Lys Ile Met Met Ser Lys Glu  
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 610 615 620  
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 625 630 635 640  
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 660 665 670  
 Phe Thr Glu Val Lys Pro Asn Asp Ser Pro Ser Lys Glu His Val Lys  
 675 680 685  
 Lys Met Lys Asn Glu Cys Ile Leu Pro Glu Gly Arg Thr Gly Val Thr  
 690 695 700  
 Gln Ile Gly Tyr Cys Val Gln Asp Thr Thr Ser Ala Asn Thr Thr Leu  
 705 710 715 720  
 Val His Gln Thr Thr Pro Ser His Val Met Pro Pro Asn His His Gln  
 725 730 735  
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 740 745 750  
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 755 760 765  
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 770 775 780  
 Met Leu Glu Ser Glu Cys Gln Ala Pro Val Gln Lys Asp Ile Lys Ile  
 785 790 795 800  
 Lys Asn Ala Asp Ser Trp Lys Ser Leu Gly Lys Pro Val Lys Pro Ser  
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 Gly Val Met Lys Ser Ser Asp Glu Leu Phe Asn Gln Phe Arg Lys Ala  
 820 825 830  
 Ala Ile Glu Lys Glu Val Lys Ala Arg Thr Gln Glu Leu Ile Arg Lys



835	840	845
His Leu Glu Gln Asn Thr Lys Glu Leu Lys Ala Ser Gln Glu Asn Gln		
850	855	860
Arg Asp Leu Gly Asn Gly Leu Thr Val Glu Ser Phe Ser Asn Lys Ile		
865	870	875
Gln Asn Lys Cys Ser Gly Glu Glu Gln Lys Glu His Pro Gln Ser Ser		
885	890	895
Glu Ala Gln Asp Lys Ser Lys Leu Trp Leu Leu Lys Asp Arg Asp Leu		
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Ala Arg Pro Lys Glu Gln Glu Arg Arg Arg Arg Glu Ala Met Val Gly		
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Asn Phe Asp		
945		

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 <212> DNA  
 <213> Homo Sapiens

<400> 686

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&lt;210&gt; 687

&lt;211&gt; 1759

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 687

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1759

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 Ala Leu Lys Lys Ala Leu Ala Ala Ala Gly Tyr Asp Val Glu Lys Asn  
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 85 90 95  
 Leu Val Gln Thr Arg Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Ser  
 100 105 110  
 Lys Lys Val Ile Pro Lys Ser Thr Arg Ser Lys Ala Lys Lys Ser Val  
 115 120 125  
 Ser Ala Lys Thr Lys Lys Leu Val Leu Ser Arg Asp Ser Lys Ser Pro  
 130 135 140  
 Lys Thr Ala Lys Thr Asn Lys Arg Ala Lys Lys Pro Arg Ala Thr Thr  
 145 150 155 160  
 Pro Lys Thr Val Arg Ser Gly Arg Lys Ala Lys Gly Ala Lys Gly Lys  
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 <212> DNA  
 <213> Homo Sapiens

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 cacctggcaa gggcatcctg gctgcagatg agtccactgg gagcattgcc aagcggtgc 300  
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 cagctgacga ccgcgtgaac cctgcattg ggggtgtcat cctcttccat gagacactct 420  
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 tgggcatcaa ggtagacaag ggcgtgggtcc ccctggcagg gacaaatggc gagactacca 540  
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 ccacgtgga gcctgagatc ctccctgatg gggaccatga cttgaagcgc tgccagtatg 780  
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&lt;210&gt; 690

&lt;211&gt; 363

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 690

```

Pro Tyr Gln Tyr Pro Ala Leu Thr Pro Glu Gln Lys Lys Glu Leu Ser
1      5      10      15
Asp Ile Ala His Arg Ile Val Ala Pro Gly Lys Gly Ile Leu Ala Ala
20     25     30
Asp Glu Ser Thr Gly Ser Ile Ala Lys Arg Leu Gln Ser Ile Gly Thr
35     40     45
Glu Asn Thr Glu Glu Asn Arg Arg Phe Tyr Arg Gln Leu Leu Leu Thr
50     55     60
Ala Asp Asp Arg Val Asn Pro Cys Ile Gly Gly Val Ile Leu Phe His
65     70     75     80
Glu Thr Leu Tyr Gln Lys Ala Asp Asp Gly Arg Pro Phe Pro Gln Val
85     90     95
Ile Lys Ser Lys Gly Gly Val Val Gly Ile Lys Val Asp Lys Gly Val
100    105    110
Val Pro Leu Ala Gly Thr Asn Gly Glu Thr Thr Thr Gln Gly Leu Asp
115    120    125
Gly Leu Ser Glu Arg Cys Ala Gln Tyr Lys Lys Asp Gly Ala Asp Phe
130    135    140
Ala Lys Trp Arg Cys Val Leu Lys Ile Gly Glu His Thr Pro Ser Ala
145    150    155    160
Leu Ala Ile Met Glu Asn Ala Asn Val Leu Ala Arg Tyr Ala Ser Ile
165    170    175
Cys Gln Gln Asn Gly Ile Val Pro Ile Val Glu Pro Glu Ile Leu Pro
180    185    190
Asp Gly Asp His Asp Leu Lys Arg Cys Gln Tyr Val Thr Glu Lys Val
195    200    205
Leu Ala Ala Val Tyr Lys Ala Leu Ser Asp His His Ile Tyr Leu Glu
210    215    220
Gly Thr Leu Leu Lys Pro Asn Met Val Thr Pro Gly His Ala Cys Thr
225    230    235    240
Gln Lys Phe Ser His Glu Glu Ile Ala Met Ala Thr Val Thr Ala Leu
245    250    255
Arg Arg Thr Val Pro Pro Ala Val Thr Gly Ile Thr Phe Leu Ser Gly
260    265    270
Gly Gln Ser Glu Glu Glu Ala Ser Ile Asn Leu Asn Ala Ile Asn Lys
275    280    285
Cys Pro Leu Leu Lys Pro Trp Ala Leu Thr Phe Ser Tyr Gly Arg Ala

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290	295	300
Leu Gln Ala Ser Ala Leu Lys Ala Trp Gly Gly	Lys Lys Glu Asn Leu	
305	310	315
Lys Ala Ala Gln Glu Tyr Val Lys Arg Ala	Leu Ala Asn Ser Leu	
	325	330
Ala Cys Gln Gly Lys Tyr Thr Pro Ser Gly Gln	Ala Gly Ala Ala Ala	
	340	345
Ser Glu Ser Leu Phe Val Ser Asn His Ala Tyr		350
355	360	

<210> 691  
 <211> 1216  
 <212> DNA  
 <213> Homo Sapiens

<400> 691

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gagttcttcg	aggaggacaa	catgctgagc	atgggcaaga	agatgatgca	ggaggccatg	360
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ggcatgaact	tctcgggtgt	ggtatttgac	acggcaccca	cgggccacac	cctgaggctg	480
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atcagccctt	tcatctcaca	gatgtgcaac	atgctggggc	tgggggacat	gaacgcagac	600
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aaggaccctg	agcagacaac	tttcatctgc	gtatgcattg	ctgagttcct	gtccctgtat	720
gagacagaga	ggctgatcca	ggagctggcc	aagtgcaga	ttgacacaca	caatataatt	780
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tcccccccat	aatacagggg	gagccacttg	ggcaggaggc	agggaggggg	ccattccccc	1140
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aatgatctt	aaactg					1216

<210> 692  
 <211> 1958  
 <212> DNA  
 <213> Homo Sapiens

<400> 692

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tcccgcacc	gtcccatctc	gcccctcgcg	tccggagtcc	ccgtggccag	atctaaccat	180
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tccctgggga	ggtgctgect	accctcctcc	gcccagcatg	ccccccatcg	ggctggataa	300
cgtggccacc	tatgcggggc	agttcaacca	ggactatctc	tcggaatgg	cggccaacat	360
gtctgggaca	tttgaggag	ccaacatgcc	caacctgtac	cctggggccc	ctggggctgg	420
ctaccaccca	gtgccccctg	gcggctttgg	gcagcccccc	tctgcccagc	agcctgttcc	480
tccctatggg	atgtatccac	ccccaggagg	aaacccaccc	tccaggatgc	cctcatatcc	540
gccataccca	ggggccccctg	tgccggggcca	gcccagcca	ccccccggac	agcagcccc	600
aggggcctac	cctgggcagc	caccagtgc	ctaccctgg	cagcctccag	tgccactccc	660

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tgggcagcag cagccagtgc cgagctaccc aggatacccg gggctctggga ctgtcacccc 720
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gacctgggtc ggtctagaac tctctcagga tgccttttct accccatccc tcacagcctc 1920
ttgctgctaa aatagatggt tcatttttct gaaaaaaa 1958

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&lt;210&gt; 693

&lt;211&gt; 505

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 693

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Met Ser Tyr Pro Gly Tyr Pro Pro Pro Gly Gly Tyr Pro Pro Ala
1          5          10          15
Ala Pro Gly Gly Gly Pro Trp Gly Gly Ala Ala Tyr Pro Pro Pro
20          25          30
Ser Met Pro Pro Ile Gly Leu Asp Asn Val Ala Thr Tyr Ala Gly Gln
35          40          45
Phe Asn Gln Asp Tyr Leu Ser Gly Met Ala Ala Asn Met Ser Gly Thr
50          55          60
Phe Gly Gly Ala Asn Met Pro Asn Leu Tyr Pro Gly Ala Pro Gly Ala
65          70          75          80
Gly Tyr Pro Pro Val Pro Pro Gly Gly Phe Gly Gln Pro Pro Ser Ala
85          90          95
Gln Gln Pro Val Pro Pro Tyr Gly Met Tyr Pro Pro Pro Gly Gly Asn
100          105          110
Pro Pro Ser Arg Met Pro Ser Tyr Pro Pro Tyr Pro Gly Ala Pro Val
115          120          125
Pro Gly Gln Pro Met Pro Pro Pro Gly Gln Gln Pro Pro Gly Ala Tyr
130          135          140
Pro Gly Gln Pro Pro Val Thr Tyr Pro Gly Gln Pro Pro Val Pro Leu
145          150          155          160
Pro Gly Gln Gln Gln Pro Val Pro Ser Tyr Pro Gly Tyr Pro Gly Ser
165          170          175
Gly Thr Val Thr Pro Ala Val Pro Pro Thr Gln Phe Gly Ser Arg Gly
180          185          190
Thr Ile Thr Asp Ala Pro Gly Phe Asp Pro Leu Arg Asp Ala Glu Val
195          200          205

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Leu Arg Lys Ala Met Lys Gly Phe Gly Thr Asp Glu Gln Ala Ile Ile  
 210 215 220  
 Asp Cys Leu Gly Ser Arg Ser Asn Lys Gln Arg Gln Gln Ile Leu Leu  
 225 230 235 240  
 Ser Phe Lys Thr Ala Tyr Gly Lys Asp Leu Ile Lys Asp Leu Lys Ser  
 245 250 255  
 Glu Leu Ser Gly Asn Phe Glu Lys Thr Ile Leu Ala Leu Met Lys Thr  
 260 265 270  
 Pro Val Leu Phe Asp Ile Tyr Glu Ile Lys Glu Ala Ile Lys Gly Val  
 275 280 285  
 Gly Thr Asp Glu Ala Cys Leu Ile Glu Ile Leu Ala Ser Arg Ser Asn  
 290 295 300  
 Glu His Ile Arg Glu Leu Asn Arg Ala Tyr Lys Ala Glu Phe Lys Lys  
 305 310 315 320  
 Thr Leu Glu Glu Ala Ile Arg Ser Asp Thr Ser Gly His Phe Gln Arg  
 325 330 335  
 Leu Leu Ile Ser Leu Ser Gln Gly Asn Arg Asp Glu Ser Thr Asn Val  
 340 345 350  
 Asp Met Ser Leu Ala Gln Arg Asp Ala Gln Glu Leu Tyr Ala Ala Gly  
 355 360 365  
 Glu Asn Arg Leu Gly Thr Asp Glu Ser Lys Phe Asn Ala Val Leu Cys  
 370 375 380  
 Ser Arg Ser Arg Ala His Leu Val Ala Val Phe Asn Glu Tyr Gln Arg  
 385 390 395 400  
 Met Thr Gly Arg Asp Ile Glu Lys Ser Ile Cys Arg Glu Met Ser Gly  
 405 410 415  
 Asp Leu Glu Glu Gly Met Leu Ala Val Val Lys Cys Leu Lys Asn Thr  
 420 425 430  
 Pro Ala Phe Phe Ala Glu Arg Leu Asn Lys Ala Met Arg Gly Ala Gly  
 435 440 445  
 Thr Lys Asp Arg Thr Leu Ile Arg Ile Met Val Ser Arg Ser Glu Thr  
 450 455 460  
 Asp Leu Leu Asp Ile Arg Ser Glu Tyr Lys Arg Met Tyr Gly Lys Ser  
 465 470 475 480  
 Leu Tyr His Asp Ile Ser Gly Asp Thr Ser Gly Asp Tyr Arg Lys Ile  
 485 490 495  
 Leu Leu Lys Ile Cys Gly Gly Asn Asp  
 500 505

&lt;210&gt; 694

&lt;211&gt; 1141

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 694

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gaatttcgta	accagaagcc	gaagccggag	aaccaagatg	aatcagaact	ccttacgggt	120
cctgatgggt	ggaaggaacc	agctttttcc	aaagaggaca	atcccagagg	acttttggag	180
gagagcagtt	tcgcaacttt	gttcccaaaa	tacaggggaag	cttacttgaa	agagtgttgg	240
ccattggtgc	agaaagcctt	aaatgaacat	catgttaatg	caaccctgga	cctgatcgaa	300
ggcagcatga	ctgtttgtac	tacaaagaag	acttttgcac	catatatcat	cattagggcc	360
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caggatgatg	ttgcatgtga	catcattaaa	ataggttctt	tagtaaggaa	taaagagaga	480
tttgtaaaac	gaagacaacg	gcttattggt	cccaaaggat	ctacattgaa	ggcattggaa	540
ctcttaacta	attgttacat	tatgggttcag	ggaaacacag	tttcagccat	tggacctttt	600

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agtggccttaa aagagggttag aaaagtagtc cttgatacta tgaagaatat tcatccaatt 660
tataacatta aaagcttaat gattaagaga gagttggcaa aagattctga attacgatca 720
caaagttggg agagattttt gccacagttc aaacacaaaa atgtgaataa acgcaaggaa 780
ccaaagaaaa aaactgttaa gaaagatata cgccattccc accaccacaa ccagaaaagtc 840
agatcgataa agaattggct agtgggtgaat actttttgaa ggcaaatacag aagaagcggc 900
agaaaaatgaa gcaataaagg ctaaacaagc agaagccatc agtaagagac aagaggaaaag 960
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tgaaactaaa attgatgtgg ccagcatcaa ggaaaagggtt aagaaaagcaa agaataagaa 1080
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a 1141

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<210> 695  
 <211> 288  
 <212> PRT  
 <213> Homo Sapiens

<400> 695

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Met Ala Ser Pro Ser Leu Glu Arg Pro Glu Lys Gly Ala Gly Lys Ser
1          5          10          15
Glu Phe Arg Asn Gln Lys Pro Lys Pro Glu Asn Gln Asp Glu Ser Glu
20          25          30
Leu Leu Thr Val Pro Asp Gly Trp Lys Glu Pro Ala Phe Ser Lys Glu
35          40          45
Asp Asn Pro Arg Gly Leu Leu Glu Glu Ser Ser Phe Ala Thr Leu Phe
50          55          60
Pro Lys Tyr Arg Glu Ala Tyr Leu Lys Glu Cys Trp Pro Leu Val Gln
65          70          75          80
Lys Ala Leu Asn Glu His His Val Asn Ala Thr Leu Asp Leu Ile Glu
85          90          95
Gly Ser Met Thr Val Cys Thr Thr Lys Lys Thr Phe Asp Pro Tyr Ile
100          105          110
Ile Ile Arg Ala Arg Asp Leu Ile Lys Leu Leu Ala Arg Ser Val Ser
115          120          125
Phe Glu Gln Ala Val Arg Ile Leu Gln Asp Asp Val Ala Cys Asp Ile
130          135          140
Ile Lys Ile Gly Ser Leu Val Arg Asn Lys Glu Arg Phe Val Lys Arg
145          150          155          160
Arg Gln Arg Leu Ile Gly Pro Lys Gly Ser Thr Leu Lys Ala Leu Glu
165          170          175
Leu Leu Thr Asn Cys Tyr Ile Met Val Gln Gly Asn Thr Val Ser Ala
180          185          190
Ile Gly Pro Phe Ser Gly Leu Lys Glu Val Arg Lys Val Val Leu Asp
195          200          205
Thr Met Lys Asn Ile His Pro Ile Tyr Asn Ile Lys Ser Leu Met Ile
210          215          220
Lys Arg Glu Leu Ala Lys Asp Ser Glu Leu Arg Ser Gln Ser Trp Glu
225          230          235          240
Arg Phe Leu Pro Gln Phe Lys His Lys Asn Val Asn Lys Arg Lys Glu
245          250          255
Pro Lys Lys Lys Thr Val Lys Lys Asp Ile Arg His Ser His His His
260          265          270
Asn Gln Lys Val Arg Ser Ile Lys Asn Trp Leu Val Val Asn Thr Phe
275          280          285

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<210> 696



&lt;211&gt; 1008

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 696

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aacgtggcag aggaaaagcc caagttaaag caacaaatga atccgaagac gaaatcccac      180
agctggtagc aataggaaaag aagactccag ctaatgaaaa agtagagatt caaaaacatg      240
ccacagggaa gaagtctcca gcaaagagtc ctaatccag caccctcgt gggaagaaaa      300
agaaaggctt tgccagcatc tgagacccca aaagctgcag agtctgagac cccagggaaa      360
agcccagaga agaagcctaa aatcaaagaa gaggcagtga aggaaaaaag tccttcgctg      420
gggaaaaaag atgcgagaca gactcccaaa aaagccagag gccaaagttt tcaccattcc      480
tagtaaatct gtgagaaaag cttcccacac ccccaaaaaa tggcccaaaa aaccctaaagt      540
accccagtcg acctaaagtc agtgattcaa ctggaaggaa acctcaatgc tgcctccaga      600
gcttttttga aatactcaga tcctggccgc ctttgttaacc ttctctaaac gtcaggcctg      660
gacttaaaag atttttttaa acctccataa gtagtccagg ggcggtggct cagcctgta      720
atcccagcac tttgggaggc cgaggcaggc ggatcacaag gtcaacgaga tcgagaccat      780
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ggaggcggag gttgcagtga gccactgcac tccagcctga tgacagagca agactcagtc      960
tcaaaaataa ataaaaataa taaaacctcc ataagtaatc ctgaaaaa      1008

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&lt;210&gt; 697

&lt;211&gt; 685

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 697

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acgagctgca ctccagcctg ggcgacagag ggaaactcca tctcaaaaaa aaaaanaaaa      60
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agacagccaa gtaaaaacgg ctcccaagac aatctacaag cactgggagg atgggggtgca      180
gcacccaaat gttcacacca tttgcagagg ggaacagcct ggcccctgct gttccaggat      240
agtaaccagg aattcagttg gtgagatgga cagcctgtta gcaggactcc atctcacttt      300
gctgtgttgt tctttttccc ttttgcceaa taaattngta acccctcacc tttcaaagt      360
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cactttggga ggcgaagatg ggctgattgc ttgagctcag gggtttaaga acagcctggg      480
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tcccagctga ggcacaagaa tccctgaac ccaggaggcn gaanncta ttnnaaccga      600
aaatttgenc ccactggccc cccaggcgg aagctagtga gccgagattg cgccactgca      660
cccctgagac gctgtntcaa aaaaa      685

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&lt;210&gt; 698

&lt;211&gt; 1205

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 698

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ggatgtgctt ttacatggaa ctccctgacca aaaacgaaaa ctcatcagag aatgtcttac      180
cggagaaaagt gaatcatcta gtgaagatga atttgaaaag gagatggaag ctgaattaaa      240
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aatggaaaaa gttgcaacag ctccgacaag gtactacgat gatatatatt ttgattctga      360
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```

gattccaaca	aatgacgaat	tactgtntga	tectgaaaaa	gataacagag	atcaggcctg	480
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gcctgttcca	aatagtgatg	ctgtcttgan	ttgtcctgcc	tgcatgacca	cactttgcct	600
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ccccttattg	atgggactga	tattcattct	gtttttgatg	aacatttgga	aactgtcggg	1140
ctttttatta	aagctctgta	gaattaaaat	gttctggaat	tataagcaa	aaaaaaaaa	1200
aaaaa						1205

&lt;210&gt; 699

&lt;211&gt; 1427

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 699

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&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 700

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&lt;213&gt; Homo Sapiens

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&lt;211&gt; 1968

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&lt;400&gt; 704

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&lt;211&gt; 800

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 705

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&lt;400&gt; 706

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aacctgcaca	ttgtgcacat	gtaccctaaa	acttaaagta	taataataat	aaaaaaaaaa	480
aaaaaaa						487

&lt;210&gt; 707

&lt;211&gt; 3599

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 707

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gtagggaggc	acctcatatg	aactacagag	acagggatgc	tcacgctgtt	gacttcagag	600
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&lt;210&gt; 708

&lt;211&gt; 1123

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 708

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Met Trp Gly Asp Ser Arg Pro Ala Asn Arg Thr Gly Pro Phe Arg Gly
 1              5              10              15
Ser Gln Glu Glu Arg Phe Ala Pro Gly Trp Asn Arg Asp Tyr Pro Pro
              20              25              30
Pro Pro Leu Lys Ser His Ala Gln Glu Arg His Ser Gly Asn Phe Pro
              35              40              45
Gly Arg Asp Ser Leu Pro Phe Asp Phe Gln Gly His Ser Gly Pro Pro
              50              55              60
Phe Ala Asn Val Glu Glu His Ser Phe Ser Tyr Gly Ala Arg Asp Gly
65              70              75              80
Pro His Gly Asp Tyr Arg Gly Gly Glu Gly Pro Gly His Asp Phe Arg
              85              90              95
Gly Gly Asp Phe Ser Ser Ser Asp Phe Gln Ser Arg Asp Ser Ser Gln
              100              105              110
Leu Asp Phe Arg Gly Arg Asp Ile His Ser Gly Asp Phe Arg Asp Arg
              115              120              125
Glu Gly Pro Pro Met Asp Tyr Arg Gly Gly Asp Gly Thr Ser Met Asp
              130              135              140
Tyr Arg Gly Arg Glu Ala Pro His Met Asn Tyr Arg Asp Arg Asp Ala
145              150              155              160
His Ala Val Asp Phe Arg Gly Arg Asp Ala Pro Pro Ser Asp Phe Arg
              165              170              175
Gly Arg Gly Thr Tyr Asp Leu Asp Phe Arg Gly Arg Asp Gly Ser His
              180              185              190
Ala Asp Phe Arg Gly Arg Asp Leu Ser Asp Leu Asp Phe Arg Ala Arg
              195              200              205
Glu Gln Ser Arg Ser Asp Phe Arg Asn Arg Asp Val Ser Asp Leu Asp
              210              215              220
Phe Arg Asp Lys Asp Gly Thr Gln Val Asp Phe Arg Gly Arg Gly Ser
225              230              235              240
Gly Thr Thr Asp Leu Asp Phe Arg Asp Arg Asp Thr Pro His Ser Asp
              245              250              255

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Phe Arg Gly Arg His Arg Ser Arg Thr Asp Gln Asp Phe Arg Gly Arg  
 260 265 270  
 Glu Met Gly Ser Cys Met Glu Phe Lys Asp Arg Glu Met Pro Pro Val  
 275 280 285  
 Asp Pro Asn Ile Leu Asp Tyr Ile Gln Pro Ser Thr Gln Asp Arg Glu  
 290 295 300  
 His Ser Gly Met Asn Val Asn Arg Arg Glu Glu Ser Thr His Asp His  
 305 310 315 320  
 Thr Ile Glu Arg Pro Ala Phe Gly Ile Gln Lys Gly Glu Phe Glu His  
 325 330 335  
 Ser Glu Thr Arg Glu Gly Glu Thr Gln Gly Val Ala Phe Glu His Glu  
 340 345 350  
 Ser Pro Ala Asp Phe Gln Asn Ser Gln Ser Pro Val Gln Asp Gln Asp  
 355 360 365  
 Lys Ser Gln Leu Ser Gly Arg Glu Glu Gln Ser Ser Asp Ala Gly Leu  
 370 375 380  
 Phe Lys Glu Glu Gly Gly Leu Asp Phe Leu Gly Arg Gln Asp Thr Asp  
 385 390 395 400  
 Tyr Arg Ser Met Glu Tyr Arg Asp Val Asp His Arg Leu Pro Gly Ser  
 405 410 415  
 Gln Met Phe Gly Tyr Gly Gln Ser Lys Ser Phe Pro Glu Gly Lys Thr  
 420 425 430  
 Ala Arg Asp Ala Gln Arg Asp Leu Gln Asp Gln Asp Tyr Arg Thr Gly  
 435 440 445  
 Pro Ser Glu Glu Lys Pro Ser Arg Leu Ile Arg Leu Ser Gly Val Pro  
 450 455 460  
 Glu Asp Ala Thr Lys Glu Glu Ile Leu Asn Ala Phe Arg Thr Pro Asp  
 465 470 475 480  
 Gly Met Pro Val Lys Asn Leu Gln Leu Lys Glu Tyr Asn Thr Gly Tyr  
 485 490 495  
 Asp Tyr Gly Tyr Val Cys Val Glu Phe Ser Leu Leu Glu Asp Ala Ile  
 500 505 510  
 Gly Cys Met Glu Ala Asn Gln Gly Thr Leu Met Ile Gln Asp Lys Glu  
 515 520 525  
 Val Thr Leu Glu Tyr Val Ser Ser Leu Asp Phe Trp Tyr Cys Lys Arg  
 530 535 540  
 Cys Lys Ala Asn Ile Gly Gly His Arg Ser Ser Cys Ser Phe Cys Lys  
 545 550 555 560  
 Asn Pro Arg Glu Val Thr Glu Ala Lys Gln Glu Leu Ile Thr Tyr Pro  
 565 570 575  
 Gln Pro Gln Lys Thr Ser Ile Pro Ala Pro Leu Glu Lys Gln Pro Asn  
 580 585 590  
 Gln Pro Leu Arg Pro Ala Asp Lys Glu Pro Glu Pro Arg Lys Arg Glu  
 595 600 605  
 Glu Gly Gln Glu Ser Arg Leu Gly His Gln Lys Arg Glu Ala Glu Arg  
 610 615 620  
 Tyr Leu Pro Pro Ser Arg Arg Glu Gly Pro Thr Phe Arg Arg Asp Arg  
 625 630 635 640  
 Glu Arg Glu Ser Trp Ser Gly Glu Thr Arg Gln Asp Gly Glu Ser Lys  
 645 650 655  
 Thr Ile Met Leu Lys Arg Ile Tyr Arg Ser Thr Pro Pro Glu Val Ile  
 660 665 670  
 Val Glu Val Leu Glu Pro Tyr Val Arg Leu Thr Thr Ala Asn Val Arg  
 675 680 685  
 Ile Ile Lys Asn Arg Thr Gly Pro Met Gly His Thr Tyr Gly Phe Ile

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        690                695                700
Asp Leu Asp Ser His Val Glu Ala Leu Arg Val Val Lys Ile Leu Gln
705                710                715                720
Asn Leu Asp Pro Pro Phe Ser Ile Asp Gly Lys Met Val Ala Val Asn
        725                730                735
Leu Ala Thr Gly Lys Arg Arg Asn Asp Ser Gly Asp His Ser Asp His
        740                745                750
Met His Tyr Tyr Gln Gly Lys Lys Tyr Phe Arg Asp Arg Arg Gly Gly
        755                760                765
Gly Arg Asn Ser Asp Trp Ser Ser Asp Thr Asn Arg Gln Gly Gln Gln
        770                775                780
Ser Ser Ser Asp Cys Tyr Ile Tyr Asp Ser Ala Ser Gly Tyr Tyr Tyr
785                790                795                800
Asp Pro Leu Ala Gly Thr Tyr Tyr Asp Pro Asn Thr Gln Gln Glu Val
        805                810                815
Tyr Val Pro Gln Asp Pro Gly Leu Pro Glu Glu Glu Glu Ile Lys Glu
        820                825                830
Lys Lys Pro Thr Ser Gln Gly Lys Ser Ser Ser Lys Lys Glu Met Ser
        835                840                845
Lys Arg Asp Gly Lys Glu Lys Lys Asp Arg Gly Val Thr Arg Phe Gln
        850                855                860
Glu Asn Ala Ser Glu Gly Lys Ala Pro Ala Glu Asp Val Phe Lys Lys
865                870                875                880
Pro Leu Pro Pro Thr Val Lys Lys Glu Glu Ser Pro Pro Pro Pro Lys
        885                890                895
Val Val Asn Pro Leu Ile Gly Leu Leu Gly Glu Tyr Gly Gly Asp Ser
        900                905                910
Asp Tyr Glu Glu Glu Glu Glu Glu Glu Gln Thr Pro Pro Pro Gln Pro
        915                920                925
Arg Thr Ala Gln Pro Gln Lys Arg Glu Glu Gln Thr Lys Lys Glu Asn
        930                935                940
Glu Glu Asp Lys Leu Thr Asp Trp Asn Lys Leu Ala Cys Leu Leu Cys
945                950                955                960
Arg Arg Gln Phe Pro Asn Lys Glu Val Leu Ile Lys His Gln Gln Leu
        965                970                975
Ser Asp Leu His Lys Gln Asn Leu Glu Ile His Arg Lys Ile Lys Gln
        980                985                990
Ser Glu Gln Glu Leu Ala Tyr Leu Glu Arg Arg Glu Arg Glu Gly Lys
        995                1000                1005
Phe Lys Gly Arg Gly Asn Asp Arg Arg Glu Lys Leu Gln Ser Phe Asp
        1010                1015                1020
Ser Pro Glu Arg Lys Arg Ile Lys Tyr Ser Arg Glu Thr Asp Ser Asp
1025                1030                1035                104
Arg Lys Leu Val Asp Lys Glu Asp Ile Asp Thr Ser Ser Lys Gly Gly
        1045                1050                1055
Cys Val Gln Gln Ala Thr Gly Trp Arg Lys Gly Thr Gly Leu Gly Tyr
        1060                1065                1070
Gly His Pro Gly Leu Ala Ser Ser Glu Glu Ala Glu Gly Arg Met Arg
        1075                1080                1085
Gly Pro Ser Val Gly Ala Ser Gly Arg Thr Ser Lys Arg Gln Ser Asn
        1090                1095                1100
Glu Thr Tyr Arg Asp Ala Val Arg Arg Val Met Phe Ala Arg Tyr Lys
1105                1110                1115                112
Glu Leu Asp

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&lt;210&gt; 709

&lt;211&gt; 3807

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 709

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ctgctaacag	aactggacct	tttcgagatg	gcgtttcgcc	gtgttgggcg	ggctggtctc	180
ggactcctga	cctcaagtga	tcacacctacc	tcggcctccc	aaagtgctgg	gactataggt	240
gtgagccacc	gcacctgcca	tttggaattg	caatctgcaa	gattttatta	cttaaagtca	300
acagatgttc	tcattcattg	ttctgaagct	tggagttcca	atgaaaaatt	tagtgggagc	360
caagaagaaa	ggtttgctcc	cgggtggaac	agggattatc	ctcctcctcc	ccttaagagt	420
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actttttttt aatgtgatta aaaaaaa 3807

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&lt;210&gt; 710

&lt;211&gt; 1177

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 710

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Met Ala Phe Arg Arg Val Gly Arg Ala Gly Leu Gly Leu Leu Thr Ser
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Ser Asp Pro Pro Thr Ser Ala Ser Gln Ser Ala Gly Thr Ile Gly Val
             20             25             30
Ser His Arg Thr Cys His Leu Asp Trp Gln Ser Ala Arg Phe Tyr Tyr
             35             40             45
Leu Asn Ala Thr Asp Val Leu Ile His Cys Ser Glu Ala Trp Ser Ser
             50             55             60
Asn Glu Lys Phe Ser Gly Ser Gln Glu Glu Arg Phe Ala Pro Gly Trp
65             70             75             80
Asn Arg Asp Tyr Pro Pro Pro Pro Leu Lys Ser His Ala Gln Glu Arg
             85             90             95
His Ser Gly Asn Phe Pro Gly Arg Asp Ser Leu Pro Phe Asp Phe Gln
             100            105            110
Gly His Ser Gly Pro Pro Phe Ala Asn Val Glu Glu His Ser Phe Ser
             115            120            125
Tyr Gly Ala Arg Asp Gly Pro His Gly Asp Tyr Arg Gly Gly Glu Gly
             130            135            140
Pro Gly His Asp Phe Arg Gly Gly Asp Phe Ser Ser Ser Asp Phe Gln
145            150            155            160
Ser Arg Asp Ser Ser Gln Leu Asp Phe Arg Gly Arg Asp Ile His Ser
             165            170            175
Gly Asp Phe Arg Asp Arg Glu Gly Pro Pro Met Asp Tyr Arg Gly Gly
             180            185            190
Asp Gly Thr Ser Met Asp Tyr Arg Gly Arg Glu Ala Pro His Met Asn
             195            200            205
Tyr Arg Asp Arg Asp Ala His Ala Val Asp Phe Arg Gly Arg Asp Ala
             210            215            220
Pro Pro Ser Asp Phe Arg Gly Arg Gly Thr Tyr Asp Leu Asp Phe Arg
225            230            235            240
Gly Arg Asp Gly Ser His Ala Asp Phe Arg Gly Arg Asp Leu Ser Asp
             245            250            255
Leu Asp Phe Arg Ala Arg Glu Gln Ser Arg Ser Asp Phe Arg Asn Arg

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Gln Asp Gly Glu Ser Lys Thr Ile Met Leu Lys Arg Ile Tyr Arg Ser  
 705 710 715 720  
 Thr Pro Pro Glu Val Ile Val Glu Val Leu Glu Pro Tyr Val Arg Leu  
 725 730 735  
 Thr Thr Ala Asn Val Arg Ile Ile Lys Asn Arg Thr Gly Pro Met Gly  
 740 745 750  
 His Thr Tyr Gly Phe Ile Asp Leu Asp Ser His Val Glu Ala Leu Arg  
 755 760 765  
 Val Val Lys Ile Leu Gln Asn Leu Asp Pro Pro Phe Ser Ile Asp Gly  
 770 775 780  
 Lys Met Val Ala Val Asn Leu Ala Thr Gly Lys Arg Arg Asn Asp Ser  
 785 790 795 800  
 Gly Asp His Ser Asp His Met His Tyr Tyr Gln Gly Lys Lys Tyr Phe  
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&lt;210&gt; 800

&lt;211&gt; 364

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 800

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          20          25          30
Ala Asp Glu Ser Thr Gly Ser Ile Ala Lys Arg Leu Gln Ser Ile Gly
          35          40          45
Thr Glu Asn Thr Glu Glu Asn Arg Arg Phe Tyr Arg Gln Leu Leu Leu
          50          55          60
Thr Ala Asp Asp Arg Val Asn Pro Cys Ile Gly Gly Val Ile Leu Phe
65          70          75          80
His Glu Thr Leu Tyr Gln Lys Ala Asp Asp Gly Arg Pro Phe Pro Gln
          85          90          95
Val Ile Lys Ser Lys Gly Gly Val Val Gly Ile Lys Val Asp Lys Gly
          100          105          110
Val Val Pro Leu Ala Gly Thr Asn Gly Glu Thr Thr Thr Gln Gly Leu
          115          120          125
Asp Gly Leu Ser Glu Arg Cys Ala Gln Tyr Lys Lys Asp Gly Ala Asp
          130          135          140
Phe Ala Lys Trp Arg Cys Val Leu Lys Ile Gly Glu His Thr Pro Ser
145          150          155          160
Ala Leu Ala Ile Met Glu Asn Ala Asn Val Leu Ala Arg Tyr Ala Ser
          165          170          175
Ile Cys Gln Gln Asn Gly Ile Val Pro Ile Val Glu Pro Glu Ile Leu
          180          185          190
Pro Asp Gly Asp His Asp Leu Lys Arg Cys Gln Tyr Val Thr Glu Lys
          195          200          205
Val Leu Ala Ala Val Tyr Lys Ala Leu Ser Asp His His Ile Tyr Leu
          210          215          220
Glu Gly Thr Leu Leu Lys Pro Asn Met Val Thr Pro Gly His Ala Cys
225          230          235          240

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Thr Gln Lys Phe Ser His Glu Glu Ile Ala Met Ala Thr Val Thr Ala  
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 Gly Gly Gln Ser Glu Glu Glu Ala Ser Ile Asn Leu Asn Ala Ile Asn  
 275 280 285  
 Lys Cys Pro Leu Leu Lys Pro Trp Ala Leu Thr Phe Ser Tyr Gly Arg  
 290 295 300  
 Ala Leu Gln Ala Ser Ala Leu Lys Ala Trp Gly Gly Lys Lys Glu Asn  
 305 310 315 320  
 Leu Lys Ala Ala Gln Glu Glu Tyr Val Lys Arg Ala Leu Ala Asn Ser  
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&lt;210&gt; 802

&lt;211&gt; 429

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 802

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Lys Thr Val Ile Val Asn Met Val Asp Val Ala Lys Ala Leu Asn Arg
35        40        45
Pro Pro Thr Tyr Pro Thr Lys Tyr Phe Gly Cys Glu Leu Gly Ala Gln
50        55        60
Thr Gln Phe Asp Val Lys Asn Asp Arg Tyr Ile Val Asn Gly Ser His
65        70        75        80
Glu Ala Asn Lys Leu Gln Asp Met Leu Asp Gly Phe Ile Lys Lys Phe
85        90        95
Val Leu Cys Pro Glu Cys Glu Asn Pro Glu Thr Asp Leu His Val Asn
100       105       110
Pro Lys Lys Gln Thr Ile Gly Asn Ser Cys Lys Ala Cys Gly Tyr Arg
115       120       125
Gly Met Leu Asp Thr His His Lys Leu Cys Thr Phe Ile Leu Lys Asn
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<213> Homo Sapiens
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-400-

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&lt;210&gt; 804

&lt;211&gt; 609

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 804

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             35             40             45
Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val
             50             55             60
Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp
             65             70             75             80
Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
             85             90             95
Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala
             100             105             110
Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
             115             120             125
His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val
             130             135             140
Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys
             145             150             155             160
Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
             165             170             175
Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys
             180             185             190
Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu

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195	200	205
Leu Arg Asp Glu Gly Lys	Ala Ser Ser Ala Lys	Gln Arg Leu Lys Cys
210	215	220
Ala Ser Leu Gln Lys Phe	Gly Glu Arg Ala Phe	Lys Ala Trp Ala Val
225	230	235
Ala Arg Leu Ser Gln Arg	Phe Pro Lys Ala Glu	Phe Ala Glu Val Ser
245	250	255
Lys Leu Val Thr Asp Leu	Thr Lys Val His Thr	Glu Cys Cys His Gly
260	265	270
Asp Leu Leu Glu Cys Ala	Asp Asp Arg Ala Asp	Leu Ala Lys Tyr Ile
275	280	285
Cys Glu Asn Gln Asp Ser	Ile Ser Ser Lys Leu	Lys Glu Cys Cys Glu
290	295	300
Lys Pro Leu Leu Glu Lys	Ser His Cys Ile Ala	Glu Val Glu Asn Asp
305	310	315
Glu Met Pro Ala Asp Leu	Pro Ser Leu Ala Ala	Asp Phe Val Glu Ser
325	330	335
Lys Asp Val Cys Lys Asn	Tyr Ala Glu Ala Lys	Asp Val Phe Leu Gly
340	345	350
Met Phe Leu Tyr Glu Tyr	Ala Arg His Pro Asp	Tyr Ser Val Val
355	360	365
Leu Leu Leu Arg Leu Ala	Lys Thr Tyr Glu Thr	Thr Leu Glu Lys Cys
370	375	380
Cys Ala Ala Ala Asp Pro	His Glu Cys Tyr Ala	Lys Val Phe Asp Glu
385	390	395
Phe Lys Pro Leu Val Glu	Glu Glu Pro Gln Asn	Leu Ile Lys Gln Asn Cys
405	410	415
Glu Leu Phe Lys Gln Leu	Gly Glu Tyr Lys Phe	Gln Asn Ala Leu Leu
420	425	430
Val Arg Tyr Thr Lys Lys	Val Pro Gln Val Ser	Thr Pro Thr Leu Val
435	440	445
Glu Val Ser Arg Asn Leu	Gly Lys Val Gly Ser	Lys Cys Cys Lys His
450	455	460
Pro Glu Ala Lys Arg Met	Pro Cys Ala Glu Asp	Tyr Leu Ser Val Val
465	470	475
Leu Asn Gln Leu Cys Val	Leu His Glu Lys Thr	Pro Val Ser Asp Arg
485	490	495
Val Thr Lys Cys Cys Thr	Glu Ser Leu Val Asn	Arg Arg Pro Cys Phe
500	505	510
Ser Ala Leu Glu Val Asp	Glu Thr Tyr Val Pro	Lys Glu Phe Asn Ala
515	520	525
Glu Thr Phe Thr Phe His	Ala Asp Ile Cys Thr	Leu Ser Glu Lys Glu
530	535	540
Arg Gln Ile Lys Lys Gln	Thr Ala Leu Val Glu	Leu Val Lys His Lys
545	550	555
Pro Lys Ala Thr Lys Glu	Gln Leu Lys Ala Val	Met Asp Asp Phe Ala
565	570	575
Ala Phe Val Glu Lys Cys	Cys Lys Ala Asp Asp	Lys Glu Thr Cys Phe
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Ala Glu Glu Gly Lys Lys	Leu Val Ala Ala Ser	Gln Ala Ala Leu Gly
595	600	605
Leu		

&lt;210&gt; 805

<211> 1356  
 <212> DNA  
 <213> Homo Sapiens

<400> 805

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ctctttgtag	acattcctgc	aaaaaagggt	tgccggtggg	attcattcac	caagcaagta	240
cagcagagtga	ccatggatgc	cccagtcagc	tccgtggctc	ttcgccagtc	gggaggctat	300
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<210> 806  
 <211> 299  
 <212> PRT  
 <213> Homo Sapiens

<400> 806

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			20					25					30		
Asp	Ile	Pro	Ala	Lys	Lys	Val	Cys	Arg	Trp	Asp	Ser	Phe	Thr	Lys	Gln
		35					40					45			
Val	Gln	Arg	Val	Thr	Met	Asp	Ala	Pro	Val	Ser	Ser	Val	Ala	Leu	Arg
	50					55					60				
Gln	Ser	Gly	Gly	Tyr	Val	Ala	Thr	Ile	Gly	Thr	Lys	Phe	Cys	Ala	Leu
65				70					75					80	
Asn	Trp	Lys	Glu	Gln	Ser	Ala	Val	Val	Leu	Ala	Thr	Val	Asp	Asn	Asp
			85					90					95		
Lys	Lys	Asn	Asn	Arg	Phe	Asn	Asp	Gly	Lys	Val	Asp	Pro	Ala	Gly	Arg
		100						105					110		
Tyr	Phe	Ala	Gly	Thr	Met	Ala	Glu	Glu	Thr	Ala	Pro	Ala	Val	Leu	Glu
		115					120					125			
Arg	His	Gln	Gly	Ala	Leu	Tyr	Ser	Leu	Phe	Pro	Asp	His	His	Val	Lys
	130					135					140				
Lys	Tyr	Phe	Asp	Gln	Val	Asp	Ile	Ser	Asn	Gly	Leu	Asp	Trp	Ser	Leu
145					150					155				160	

Asp His Lys Ile Phe Tyr Tyr Ile Asp Ser Leu Ser Tyr Ser Val Asp  
 165 170 175  
 Ala Phe Asp Tyr Asp Leu Gln Thr Gly Gln Ile Ser Asn Arg Arg Ser  
 180 185 190  
 Val Tyr Lys Leu Glu Lys Glu Glu Gln Ile Pro Asp Gly Met Cys Ile  
 195 200 205  
 Asp Ala Glu Gly Lys Leu Trp Val Ala Cys Tyr Asn Gly Gly Arg Val  
 210 215 220  
 Ile Arg Leu Asp Pro Val Thr Gly Lys Arg Leu Gln Thr Val Lys Leu  
 225 230 235 240  
 Pro Val Asp Lys Thr Thr Ser Cys Cys Phe Gly Gly Lys Asn Tyr Ser  
 245 250 255  
 Glu Met Tyr Val Thr Cys Ala Arg Asp Gly Met Asp Pro Glu Gly Leu  
 260 265 270  
 Leu Arg Gln Pro Glu Ala Gly Gly Ile Phe Lys Ile Thr Gly Leu Gly  
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 Val Lys Gly Ile Ala Pro Tyr Ser Tyr Ala Gly  
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<210> 807  
 <211> 1980  
 <212> DNA  
 <213> Homo Sapiens

<400> 807  
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<210> 808

<211> 659

<212> PRT

<213> Homo Sapiens

<400> 808

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 Trp Asn Lys Tyr Asp Asp Arg Leu Met Lys Ala Ala Glu Arg Gly Asp  
 35 40 45  
 Val Glu Lys Val Ser Ser Ile Leu Ala Lys Lys Gly Ile Asn Pro Gly  
 50 55 60  
 Lys Leu Asp Val Glu Gly Arg Ser Ala Phe His Val Val Ala Ser Lys  
 65 70 75 80  
 Gly Asn Leu Glu Cys Leu Asn Ala Ile Leu Ile His Gly Val Asp Ile  
 85 90 95  
 Thr Thr Ser Asp Thr Ala Gly Arg Asn Ala Leu His Leu Ala Ala Lys  
 100 105 110  
 Tyr Gly His Ala Leu Cys Leu Gln Lys Leu Leu Gln Tyr Asn Cys Pro  
 115 120 125  
 Thr Glu His Ala Asp Leu Gln Gly Arg Thr Ala Leu His Asp Ala Ala  
 130 135 140  
 Met Ala Asp Cys Pro Ser Ser Ile Gln Leu Leu Cys Asp His Gly Ala  
 145 150 155 160  
 Ser Val Asn Ala Lys Asp Val Asp Gly Arg Thr Pro Leu Val Leu Ala  
 165 170 175  
 Thr Gln Met Cys Arg Pro Ala Ile Cys Gln Leu Leu Ile Asp Arg Gly  
 180 185 190  
 Ala Glu Ile Asn Ser Arg Asp Lys Gln Asn Arg Thr Ala Leu Met Leu  
 195 200 205  
 Gly Cys Glu Tyr Gly Cys Lys Asp Ala Val Glu Val Leu Leu Lys Asn  
 210 215 220  
 Gly Ala Asp Val Ser Leu Leu Asp Ala Leu Gly His Asp Ser Ser Tyr  
 225 230 235 240  
 Tyr Ala Arg Ile Gly Asp Asn Leu Asp Ile Leu Thr Leu Leu Lys Thr  
 245 250 255  
 Ala Ser Glu Asn Thr Asn Lys Gly Arg Glu Leu Trp Lys Lys Gly Pro  
 260 265 270  
 Ser Leu Gln Gln Arg Asn Leu Pro Tyr Met Leu Asp Glu Val Asn Val  
 275 280 285  
 Lys Ser Ser Gln Arg Glu His Arg Asn Ile Gln Glu Leu Glu Ile Glu  
 290 295 300  
 Asn Glu Asp Leu Lys Asp Arg Leu Arg Lys Ile Gln Gln Glu Gln Arg  
 305 310 315 320  
 Ile Leu Leu Asp Lys Val Asn Gly Leu Gln Leu Gln Leu Asn Glu Glu  
 325 330 335  
 Val Met Val Ala Asp Asp Leu Glu Ser Glu Lys Glu Lys Leu Lys Ser  
 340 345 350  
 Leu Leu Val Ala Lys Glu Lys Gln His Glu Glu Ser Leu Arg Thr Ile



355	360	365
Glu Ser Leu Lys Asn Arg Phe Lys Tyr Phe Glu Cys Thr Ser Pro Gly		
370	375	380
Val Pro Ala His Met Gln Ser Arg Ser Met Leu Arg Pro Leu Glu Leu		
385	390	395
Ser Leu Pro Asn Gln Thr Ser Tyr Ser Glu Asn Asp Leu Leu Lys Lys		
405	410	415
Glu Leu Glu Ala Met Arg Thr Phe Cys Glu Ser Ala Lys Gln Asp Arg		
420	425	430
Leu Lys Leu Gln Asn Gly Val Ala His Lys Val Ala Glu Cys Lys Ala		
435	440	445
Leu Gly Leu Glu Cys Glu Arg Ile Lys Glu Asp Ser Asp Glu Gln Ile		
450	455	460
Lys Gln Leu Glu Asp Ala Leu Lys Asp Val Gln Lys Arg Met Tyr Glu		
465	470	475
Ser Glu Gly Lys Val Lys Gln Met Gln Thr His Phe Leu Ala Leu Lys		
485	490	495
Glu His Leu Thr Ser Glu Ala Ala Ile Gly Asn His Arg Leu Met Glu		
500	505	510
Glu Leu Lys Asp Gln Leu Lys Asp Met Lys Ala Lys Tyr Glu Gly Ala		
515	520	525
Ser Ala Glu Val Gly Lys Leu Arg Asn Gln Ile Lys Gln Asn Glu Leu		
530	535	540
Leu Val Glu Gln Phe Arg Arg Asp Glu Gly Lys Leu Val Glu Glu Asn		
545	550	555
Lys Arg Leu Gln Lys Glu Leu Ser Met Cys Glu Thr Glu Arg Asp Lys		
565	570	575
Lys Gly Arg Arg Val Ala Glu Val Glu Gly Gln Val Lys Glu Leu Leu		
580	585	590
Ala Lys Leu Thr Leu Ser Val Pro Thr Glu Lys Phe Glu Ser Met Lys		
595	600	605
Ser Leu Leu Ser Ser Glu Val Asn Glu Lys Val Lys Lys Ile Gly Glu		
610	615	620
Thr Glu Arg Glu Tyr Glu Lys Ser Leu Thr Glu Ile Arg Gln Leu Arg		
625	630	635
Arg Glu Leu Glu Asn Cys Lys Arg Gln Thr Ser Ser Ala Cys Gln Ala		
645	650	655
Arg Gly Ala		

&lt;210&gt; 809

&lt;211&gt; 1725

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 809

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&lt;210&gt; 810

&lt;211&gt; 355

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 810

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Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro Ala Val Pro
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Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu Gln Ile Thr
      20          25          30
Val Asn Gly Thr Val Leu Ser Ser Ser Gly Thr Arg Phe Ala Val Asn
      35          40          45
Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His Phe Asn Pro
      50          55          60
Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg Gln Asn Gly
      65          70          75          80
Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe Gln Lys Gly
      85          90          95
Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp Phe Lys Val
      100          105          110
Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg Val Pro Phe
      115          120          125
His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln Leu Ser Tyr
      130          135          140
Ile Ser Phe Gln Asn Pro Arg Thr Val Pro Val Gln Pro Ala Phe Ser
      145          150          155          160
Thr Val Pro Phe Ser Gln Pro Val Cys Phe Pro Pro Arg Pro Arg Gly
      165          170          175
Arg Arg Gln Lys Pro Pro Gly Val Trp Pro Ala Asn Pro Ala Pro Ile
      180          185          190
Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly Gln Met Phe
      195          200          205
Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro Ala Tyr Pro
      210          215          220

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Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro Ser Lys Ser  
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 245 250 255  
 Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn Pro Arg Phe  
 260 265 270  
 Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn Ser Trp Gly  
 275 280 285  
 Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val Arg Gly Gln  
 290 295 300  
 Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu Lys Val Ala  
 305 310 315 320  
 Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu Arg Asn Leu  
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<210> 811  
 <211> 1022  
 <212> DNA  
 <213> Homo Sapiens

<400> 811  
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&lt;210&gt; 814

&lt;211&gt; 1392

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 814

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Lys Glu Pro Ser Ala Thr Pro Pro Ile Ser Asn Leu Thr Lys Thr Ala
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&lt;211&gt; 647

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 815

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 Cys Ala His Asp Trp Val Tyr Glu  
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CORRECTED  
VERSION\*CORRECTED  
VERSION\*\*

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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## (57) Abstract

Tumor cell-specific antigens from melanoma cells have previously been identified using autologous cytolytic T cells clones from the patient, but the same approach did not work well with other tumour types. Here, screening of such antigens was successfully performed using antisera from the patient. Provided are several tumor cell-specific antigens, nucleic acids encoding them, antibodies and CTL's directed against these antigens, antigenic fragments diagnostic kits, etc.

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# INTERNATIONAL SEARCH REPORT

National Application No

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/12 C07K14/705 C12Q1/68 G01N33/53 C07K16/28  
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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 C12N C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 97 17470 A (HOLLAND JAMES F) 15 May 1997</p> <p>Also against claims 82-84, 116, 117 see whole document, particularly the claims</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/-</p>	<p>1,2, 4-10, 18, 21-23, 27, 28, 31, 32, 40, 42, 44, 45, 48-51, 58-60, 67-70, 76-79</p>

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# INTERNATIONAL SEARCH REPORT

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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	WO 97 17441 A (KISHIMURA MASAOKI ;OSAKADA FUMIO (JP); OSAKI SHOICHI (JP); NAKAO K) 15 May 1997  see the whole document -& EP 0 869 176 A (KANEKA CORPORATION, OSAKA, JAPAN) 7 October 1998 Also against claims 68-72,74,76,77,82,116,117 see claims 10,12; examples 2,5  ---	1,2,4-8, 13,18, 21,22, 24, 27-29, 31,32, 35,40, 42,44, 45, 47-50, 54,59, 60,63,67
X	WO 97 02362 A (FOX CHASE CANCER CENTER) 23 January 1997  see the whole document, particularly the claims and seq. 1 and 2. Also against claims 70-72,74,76-80,82-85,88,89,99-104,108-111, 116,117. see page 18, line 20 - page 22, line 33  ---  -/--	1,2, 4-10,15, 18, 21-24, 27-29, 31,32, 37,40, 42-45, 47-50, 56, 58-60, 65,67

## INTERNATIONAL SEARCH REPORT

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Category <sup>3</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>VAUGHAN, J.H. ET AL.: "Epstein-Barr virus-induced autoimmune responses." JOURNAL OF CLINICAL INVESTIGATION, vol. 95, no. 3, March 1995, pages 1306-15, XP002103180</p> <p>see the whole document -&amp; DATABASE EMBL - EMHUM1 Entry HSIIGGAUA, Acc.no. L38696, 17 February 1995 VAUGHAN, J.H. ET AL.: "Homo sapiens autoantigen p542 mRNA, complete cds." XP002103198 see the whole document</p>	<p>1,2,18, 21,22, 24, 27-29, 31,35, 40,44, 45, 47-50, 54,59, 60,63, 67-72, 74-80,82</p>
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X	<p>COATES, P.J. ET AL.: "Identification of the antigen recognized by the monoclonal antibody BU31 as lamins A and C" JOURNAL OF PATHOLOGY, vol. 178, no. 1, January 1996, pages 21-9, XP002104547 see abstract</p>	<p>1,2, 4-10,15, 31,32, 37,40, 42,116, 117</p>

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Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	<p style="text-align: center;">---</p> <p>MINEGISHI, M. ET AL.: "Structure and function of Cas-L, a 105 kD Crk-associated substructure-related protein that is involved in beta-1 integrin-mediated signaling in lymphocytes." JOURNAL OF EXPERIMENTAL MEDICINE, vol. 184, no. 4, 1 October 1996, pages 1365-75, XP002103183</p> <p>also against claims 116 and 117 see figure 4</p>	<p>18, 21-23, 27-29, 31,32, 37,40, 44,45, 47-50, 56, 58-60, 65, 67-72, 74-80, 82-84</p>
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X	<p style="text-align: center;">---</p> <p>WO 97 21729 A (SLOAN KETTERING INST CANCER) 19 June 1997</p> <p>see page 3, line 24 - line 29 see page 6, line 27 - line 29; figure 3 see page 27, line 15 see page 28, line 27 - line 28</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	<p>31,32, 37, 40-42, 116,117</p>



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 International Application No  
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Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	<p>ONO M ET AL: "NUCLEOTIDE SEQUENCE OF HUMAN ENDOGENOUS RETROVIRUS GENOME RELATED TO THE MOUSE MAMMARY TUMOR VIRUS GENOME" JOURNAL OF VIROLOGY, vol. 60, no. 2, 1 November 1986, pages 589-598, XP000673638            see page 597, left-hand column, paragraph 5 - right-hand column, paragraph 1; figure 1</p> <p>---</p>	<p>44,45,            47,48,            59,60,            67-72,74</p>
X	<p>DATABASE EMBL - EMBL16            Entry HSC9958, Acc.no. C15995, 29 September 1996            FUJIWARA, T. ET AL.: "Human fetal brain cDNA 5'-end GEN-421G02." XP002103191            see the whole document</p> <p>---</p>	<p>44,59,            60,63,            67-70</p>
X	<p>DATABASE EMBL - EMBL13            Entry HS570350, Acc.no. W45570, 27 May 1996            HILLIER, L. ET AL.: "zc26f08.s1 Soares senescent fibroblasts NbHSF Homo sapiens cDNA clone 323463 3'" XP002103192            see the whole document</p> <p>---</p>	<p>44,59,            60,63,            67-70</p>
X	<p>DATABASE EMBL - EMBL15            Entry HSA07407, Acc.no. AA007407, 28 July 1996            HILLIER, L. ET AL.: "zh97b08.r1 Soares fetal liver spleen 1NFLS S1 Homo sapiens cDNA clone 429207 5'" XP002103193            see the whole document</p> <p>---</p>	<p>44,59,            60,63,            67-70</p>
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X	HUNG, D.T. ET AL.: "cDNA cloning of a human 25 kDa FK506 and rapamycin binding protein." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 184, no. 2, 30 April 1992, pages 733-8, XP002103178 see figure 2	44,59, 60,63, 67-70
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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL - EMBEST15  Entry HSAA33416, Acc.no. AA133416,  6 December 1996  HILLIER, L. ET AL.: "zk96e08.r1 Soares  pregnant uterus NbHPU Homo sapiens cDNA  clone 490694 5'."  XP002103196  see the whole document</p>	44,45, 67,70
X	<p>---  DATABASE EMBL - EMBEST11  Entry HS1282878, Acc.no. AA487071,  28 June 1997  HILLIER, L. ET AL.: "ab18f11.s1 Stratagene  lung (#937210) Homo sapiens cDNA clone  841197 3' similar to contains Alu  repetitive element."  XP002103197  see the whole document</p>	44,45, 67,70
X	<p>---  DATABASE EMBL - EMBEST15  Entry HSAA21198, entry AA121198,  21 November 1996  HILLIER, L. ET AL.: "zl88g08.r1 Stratagene  colon (#937204) Homo sapiens cDNA clone  511742 5'."  XP002103200  see the whole document</p>	44,45, 60,62, 67,70
X	<p>---  DATABASE EMBL - EMBEST15  Entry HSAA21174, Acc.no. AA121174,  21 November 1996  HILLIER, L. ET AL.: "zl88g08.s1 Stratagene  colon (#937204) Homo sapiens cDNA clone  511742 3'."  XP002103202  see the whole document</p>	44,45, 60,62, 67,70
X	<p>---  DATABASE EMBL - EMBEST17  Entry HSW22160, Acc.no. W22160, 9 May 1996  NATHANS, J.: "63A6 Human retina cDNA  Tsp509I-cleaved sublibrary Homo sapiens  cDNA not directional."  XP002103201  see the whole document</p>	44,45, 60,62, 67,70
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X	<p>MIKI Y ET AL: "A STRONG CANDIDATE FOR THE  BREAST AND OVARIAN CANCER SUSCEPTIBILITY  GENE BRCA1"  SCIENCE,  vol. 266, no. 12, 7 October 1994, pages  66-71, XP000202410  see the whole document  -&amp; DATABASE EMBL - EMBEST5  Entry/Acc.no. AF039241, 17 January 1998  MIKI, Y. ET AL.: "Homo sapiens clone  11-67js mRNA,partial sequence."  XP002103205  see the whole document</p>	<p>44,45,  60,62,  67,70</p>
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X	<p>NAGASE T ET AL: "PREDICTION OF THE CODING  SEQUENCES OF UNIDENTIFIED HUMAN GENES  VI.THE CODING SEQUENCES OF 80 NEW GENES  (KIAA0201-KIAA0280) DEDUCED BYANALYSIS OF  CDNA CLONES FROM CELL LINE KG-1 AND BRAIN"  DNA RESEARCH,  vol. 3, no. 5, 1 January 1996, pages  321-329, XP002059454  see the whole document  -&amp; DATABASE EMBL - EMHUM1  Entry HSD455, Acc.no. D87455,  9 November 1996  NOMURA, N.: "Human mRNA for KIAA0266 gene,  complete cds."  XP002103207  see the whole document</p>	<p>44,45,  60,62,  67,70</p>

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International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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X	<p>--- DATABASE EMBL - EMHUM2 Entry HSU50839, Acc.no. U50839, 9 March 1997 LATIF, F. ET AL.: "Homo sapiens g16 protein (g16) mRNA, complete cds." XP002103209 see the whole document</p>	44,45, 60,64, 67,70
X	<p>--- LI, H. ET AL.: "Isolation and sequence analysis of the human syntaxin-encoding gene." GENE, vol. 143, 1994, pages 303-4, XP002103182 see the whole document</p>	44,45, 47,48, 59,60, 65, 70-72, 74,83,84
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X	<p>--- FISHER, D.Z. ET AL.: "cDNA sequencing of nuclear lamins A and C reveals primary and secondary structural homology to intermediate filament proteins." PROC.NAT'L.ACAD.SCI.USA, vol. 83, September 1986, pages 6450-4, XP002103184 see figure 2</p>	44,45, 59,60, 67-70
X	<p>--- DATABASE EMBL - EMBEST16 Entry HSAA54222, Acc.no. AA454222, 11 June 1997 HILLIER, L. ET AL.: "zx48g12.s1 Soares testis NHT Homo sapiens cDNA clone 795526 3' similar to gb:D42040 RING3 PROTEIN (HUMAN)" XP002103189 see the whole document</p>	67,69
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International Application No.

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL - EMBEST11  Entry HS125289, Acc.no. AA454221,  11 June 1997  HILLIER, L. ET AL.: "zx48g12.r1 Soares  testis NHT Homo sapiens cDNA clone 795526  5' similar to TR:E243068 E243068 KINASE."  XP002103190  see the whole document</p>	67,69
X	<p>---  DATABASE EMBL - EMBEST20  Entry MMAA84412, Acc.no. AA184412,  19 February 1997  MARRA, M. ET AL.: "mt34f07.r1 Soares mouse  3NbMS Mus musculus cDNA clone 622981 5'  similar to SW:OXYB_HUMAN P22059  OXYSTEROL-BINDING PROTEIN."  XP002103194  see the whole document</p>	67-70
A	<p>---  WO 96 29409 A (LUDWIG INST CANCER RES  ;UNIV LEIDEN (NL)) 26 September 1996   see the whole document</p>	1-11, 17-33, 39-52, 58-61, 67-117
A	<p>---  WO 92 20356 A (LUDWIG INST CANCER RES)  26 November 1992   see the whole document, particularly the  claims</p>	1-11, 17-33, 39-52, 58-61, 67-117
A	<p>---  WO 95 23874 A (LUDWIG INST CANCER RES)  8 September 1995  see page 5, line 10-14; claims 3,4,7;  examples 33,36,43,44</p>	1-4
A	<p>---  FRANZÉN, B. ET AL.: "Analysis of  polypeptide expression in benign and  malignant human breast lesions:  down-regulation of cytokeratins."  BRITISH JOURNAL OF CANCER,  vol. 73, 1996, pages 1632-8, XP002104551  see abstract</p>	1,2,4-9, 13
A	<p>---  WO 96 10413 A (LUDWIG INST CANCER RES)  11 April 1996  see the whole document, particularly the  claims  see abstract</p>	3,19,20, 26,39
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A	BOON T ET AL: "Tumor antigens recognized by T cells" IMMUNOLOGY TODAY, vol. 18, no. 6, June 1997, page 267-268 XP004068293 see the whole document ---	
A	SAHIN, U. ET AL.: "Human neoplasms elicit multiple specific immune responses in the autologous host." PROC.NATL.ACAD.SCI.USA, vol. 92, December 1995, pages 11810-3, XP002091914 cited in the application see the whole document ---	
P,X	DATABASE EMBL - EMHUM1 Entry/Acc.no. AC004022, 22 January 1998 HINDS, K. ET AL.: "Homo sapiens BAC clone GS155M11 from 7q21-q22, complete sequence." XP002091837 from nt.330-810 ---	1,2
P,X	ALAIYA, A.A. ET AL.: "Phenotypic analysis of ovarian carcinoma: polypeptide expression in benign, borderline and malignant tumors." JOURNAL OF CNACER, vol. 73, no. 5, 27 November 1997, pages 678-83, XP002104552 see abstract; figure 2 ---	1-10,15
P,X	GÜRE, A.O. ET AL.: "Human lung cancer antigens recognized by autologous antibodies: definition of a novel cDNA derived from the tumor suppressor gene locus on chromosome 3p21.3" CANCER RESEARCH, vol. 58, 1 March 1998, pages 1034-41, XP002103188  see the whole document ---	1,2,4,5, 9,14,18, 21,22, 27,44, 45,49, 50,55, 59,60, 64, 67-70, 83,84
P,X	SCANLAN, M.J. ET AL.: "Characterization of human colon cancer antigens recognized by autologous antibodies" INTERNATIONAL JOURNAL OF CANCER, 29 May 1998, pages 652-8, XP002103186  see the whole document ---	31,32, 34,40, 59,60, 62, 67-70, 83,84, 116
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>NAGASE, T. ET AL.: "Prediction of the coding sequence of unidentified human genes. IX. The complete sequence of 100 new cDNA clones from barin which can code for large proteins in vivo."</p> <p>DNA RESEARCH, vol. 5, 28 February 1998, pages 31-39, XP002103187 see figure 1; table 3 -&amp; DATABASE EMBL Entry/acc.no. AB011172, 10 April 1998 NAGASE, T. ET AL.: "Homo sapiens mRNA for KIAA0600 protein, partial cds." XP002104556 see the whole document</p>	44,45, 67-70, 83,84
P,X	<p>JONES, M.H. ET AL.: "Identification and characterization of BRDT: a testis-specific gene related to the bromodomain genes RING3 and Drosophila fsh."</p> <p>GENOMICS, vol. 45, no. 3, 1 November 1997, pages 529-34, XP002103185 see page 529, right-hand column, paragraph 2 see page 530, left-hand column, paragraph 2; figure 1 see page 532, right-hand column, paragraph 2</p>	44,45, 59,60, 67-70, 83,84
P,X	<p>ISHIKAWA K ET AL: "Prediction of the coding sequences of unidentified human genes. X The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro"</p> <p>DNA RESEARCH, vol. 5, no. 321, 30 June 1998, pages 169-176, XP002089186 see abstract; figures 1,2; table 2</p>	44,59, 60,63, 67-70
E	<p>US 5 858 723 A (MUELLER-LANTZSCH NIKOLAUS ET AL) 12 January 1999</p> <p>Also against claims 108,109,116,117 see the whole document</p>	1,2, 4-10,31, 32,40, 42,43, 49,50, 58-60, 67,69, 71,72, 74-79, 82-84, 99-104

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	<p>WO 98 40483 A (HUMAN GENOME SCIENCES INC ;GREENE JOHN M (US); LI YI (US); ROSEN C) 17 September 1998</p> <p>Also against claims 74,76-80,82-85,88,89, 99-104,108,109,111,116,117. See seq. 24 and the claims.</p>	<p>1,2, 4-10,14, 18, 21-24, 27,28, 31,32, 36,40, 44,45, 47-50, 55, 58-60, 64,67-72</p>
E	<p>WO 98 08866 A (WISTAR INST) 5 March 1998 see the whole document</p>	<p>1,2</p>
E	<p>WO 98 48015 A (CHUGAI RES INST MOLECULAR MED ;JONES MICHAEL H CHUGAI RESEARC (JP)) 29 October 1998</p> <p>see whole document, particularly the claims. &amp; DATABASE WPI Derwent Publications Ltd., London, GB; AN 98-583658 XP002103211 see abstract</p>	<p>18,22, 23, 27-29, 31,32, 40, 44-50, 58-60, 67-72, 74, 76-78, 85,88, 89,102, 103</p>
E	<p>WO 98 32853 A (GENETICS INST) 30 July 1998</p> <p>see seq. 7 and 8 see page 6, line 23 - page 8, line 12; claims 20-22 see page 21, line 17 - page 22, line 11</p>	<p>18,21, 22,24, 27-29, 44,45, 47-50, 53,59, 60,62, 67-72, 74, 76-80,82</p>

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	<p>SCANLAN, M.J. ET AL.: "Isoforms of the human PDZ-73 protein exhibit differential tissue expression"</p> <p>BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1445, no. 1, 1999, pages 39-52, XP002104553</p> <p>also for claims 77-80,82-84,116.</p> <p>see the whole document</p> <p>---</p>	
T	<p>DRABKIN, H.A. ET AL.: "DEF-3(g16/NY-LU-12), an RNA binding protein from the 3p21.3 homozygous deletion region in SCLC"</p> <p>ONCOGENE, vol. 18, 1999, pages 2589-97, XP002104554</p> <p>see the whole document</p> <p>-----</p>	

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## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
Although claims 85-111 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
1-14, 17-36, 39-55, 58-64, 67-117; see additional sheets, pages 3-4.
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1-11,17-33,39-52,58-61,67-117,  
all partially

The nucleic acid sequence of Seq.ID 1, fragments or complements thereof, and the corresponding polypeptide(s) encoded thereby, and immunogenic and/or HLA binding fragments thereof, optionally as part of a complex with a HLA molecule, an expression vector comprising said nucleic acid, and optionally a human HLA molecule, a host cell transformed with said vector, and an antibody against said polypeptide(s).

Also a method of diagnosing of a disorder characterised by overexpression of said polypeptide(s) and a method for determining regression, progression or onset of a disease associated with overexpression of said polypeptide(s), using agents that specifically bind to said nucleic acid, said polypeptide(s) or complexes of (fragments of) said polypeptide(s) and a HLA molecule. A kit comprising two polynucleotides for the detection of said nucleic acid  
Also pharmaceutical preparations

- which enrich the presence of said polypeptide-HLA complex, optionally comprising an adjuvant, or
- which inhibits the expression of said polypeptide(s), or
- comprising an agent that selectively binds said polypeptide, optionally as a conjugate with a diagnostic or therapeutic compound, or
- comprising said nucleic acid, optionally in an expression vector, optionally in a host cell, or
- comprising said polypeptide(s), optionally in combination with an adjuvant, or
- comprising cytolytic T cells, specific for said polypeptide-HLA complex, or
- comprising an antibody against said polypeptide(s).

Inventions 2-119: claims 1-11,13,15,17-33,35,37,  
39-52,54,56,58-61,63,65,67-117, all partially (1)

Inventions 2-119: Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:2-40,66,89-169 (odd numbers), 170,172,174, and 176-210, where invention 2 is limited to Seq.ID:2 and corresponding polypeptides encoded thereby, invention 3 is limited to Seq.ID:3 and corresponding polypeptides encoded thereby,....., and invention 119 is limited to Seq.ID:210 and corresponding polypeptides encoded thereby.

Invention 120: claims 1-10,13,17-32,35,  
39-51,54,58-60,63,67-117, all partially

Idem as subject 1 but limited to the DNA sequences seq.ID:211 and 329 and corresponding polypeptides encoded thereby.

Inventions 121-452: claims 1-10,13,16-32,35,38-51, 54,57-60,63,66-117, all partially (1)

Inventions 121-452: Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:212-328, and 330-543, where invention 121 is limited to Seq.ID:211 and corresponding polypeptides encoded thereby, invention 122 is limited to Seq.ID:212 and corresponding polypeptides encoded thereby,....., and invention 452 is limited to Seq.ID:543 and corresponding polypeptides encoded thereby.

Invention 453: claims 1-10,12,17-32,34,39-51,53, 58-60,62,67-117, all partially

Idem as subject 1 but limited to the DNA sequences seq.ID:544 and 554 and corresponding polypeptides encoded thereby.

Inventions 454 and 455: claims 1-10,12,17-32,34, 39-51,53,58-60,62,67-117, all partially

Inventions 454 and 455: Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:546 and 548, where invention 454 is limited to Seq.ID:546 and corresponding polypeptides encoded thereby, and invention 455 is limited to Seq.ID:548 and corresponding polypeptides encoded thereby.

Invention 456: claims 1-10,12,17-32,34,39-51,53, 58-60,62,67-117, all partially

Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:550, 552, 556, 558 and 560 and corresponding polypeptides encoded thereby.

Inventions 457-582: claims 1-10,12-14,17-32,34-36, 39-51,53-55,58-60,62-64,67-117, all partially (1)

Inventions 457-582: Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:562-586 (even numbers),

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588-683, 686, 687, 689, 691, 692, 692, and 696-706, where invention 457 is limited to Seq.ID:562 and corresponding polypeptides encoded thereby, invention 458 is limited to Seq.ID:564 and corresponding polypeptides encoded thereby,....., and invention 582 is limited to Seq.ID:706 and corresponding polypeptides encoded thereby.

Invention 583: claims 1-10, 14, 17-32, 36, 39-51, 55, 58-60, 64, 67-117, all partially

Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:707, 709, 711 and 712 and corresponding polypeptides encoded thereby.

Inventions 584-592: claims 1-117, all partially (1)

Inventions 584-592: Idem as subject 1 but limited to each of the DNA sequences as in Seq.ID:799-815 (odd numbers), where invention 584 is limited to Seq.ID:799 and corresponding polypeptides encoded thereby, invention 585 is limited to Seq.ID:801 and corresponding polypeptides encoded thereby,....., and invention 592 is limited to Seq.ID:815 and corresponding polypeptides encoded thereby).

For the sake of conciseness, the subject matter of the first invention is explicitly defined, the other subject matters are defined by analogy thereto.

(1) In as far as the claims searched for a group of inventions refer to specific groups of sequences, only those claims which refer to the groups comprising the nucleic acid sequence of a particular invention, and/or its corresponding polypeptide sequence(s), form parts of that invention.

Due to the fact that extensive sequence homologies were found between several groups of sequences during the additional searches, some of the sequences have been grouped, whereby each of these groups comprising two or more such homologous sequences is considered to be one invention.

Claims searched during primary and additional searches: 1-14, 17-36, 39-55, 58-64, 67-117, limited to:

Invention 1, seq.ID.1  
Invention 52, seq.ID.111, and 112 (transl.)  
Invention 61, seq.ID.129, and 130 (transl.)  
Invention 71, seq.ID.149, and 150 (transl.)  
Invention 72, seq.ID.151, and 152 (transl.)  
Invention 116, seq.ID.206  
Invention 120, seq.ID.211 and 329; (related sequences)  
Invention 137, seq.ID.228  
Invention 139, seq.ID.330

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Invention 219, seq.ID.411  
Invention 453, seq.ID.544, and 545 (transl.),  
and seq.ID.554, and 555 (transl.);  
(related sequences)  
Invention 454, seq.ID.546, and 547 (transl.)  
Invention 455, seq.ID.548, and 548 (transl.)  
Invention 456, seq.ID.550, and 551 (transl.),  
and seq.ID.552, and 553 (transl.),  
and seq.ID.556, and 557 (transl.),  
and seq.ID.558, and 559 (transl.),  
and seq.ID.560, and 561 (transl.);  
(related sequences)  
Invention 547 seq.ID.665  
Invention 548, seq.ID.666  
Invention 554, seq.ID.672  
Invention 558, seq.ID.676  
Invention 563, seq.ID.681  
Invention 566, seq.ID.686  
Invention 583, seq.ID.707, and 708 (transl.),  
and seq.ID.709, and 710 (transl.),  
and seq.ID.711,  
and seq.ID.712;  
(related sequences).

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